The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. 130, No. 5 — CHICAGO, ILLINOIS — FEBRUARY 2, 1946

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OVERTREATMENT DERMATITIS OF THE FEET

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The human foot has become the target of unbelievable chemical abuse. Feet are seen daily, painted all the colors of the rainbow or daubed so thick with salves that removal with a tongue blade is necessary to view the underlying dermatitis. The shoes smell of solution of formaldehyde and are caked on the inside with fungicidal powders. The patients, when questioned about the number of remedies used, shrug their shoulders and exclaim "I couldn't begin to recall. I've used everything. You are the sixth or seventh doctor I have seen. I've had this stuff between my toes for years. Just when I think it is well, it's back again. Each time it comes back I try something else. I've spent a small fortune for remedies, and look at my poor feet." These patients are sure of the cause of their dermatitis. It is the "athlete's foot" or the "fungus." Lay periodicals teach self diagnosis and treatment.

Every channel of advertising implores the sufferers, directly or by more discreet ways, to apply this remedy or try this when others fail: to put your fungus to sleep; to stop fierce, torturing, maddening itch; to relieve and quiet the burning; to sooth stinging; to heal ugly cracks and to allay suffering and pain. A few of the admonitions to daub dermatitis pedis are displayed in figure 1. When the lay diagnosis has been made, the person can choose for treatment in this locality any of the remedies shown in figure 2. Depending on the one chosen, the advent of overtreatment will be short or delayed.

THE PAST TREATMENT PATCH TEST

To date over 400 dermatologic patients have been patch tested with the remedies applied before the initial visit. These included the assortments of tinctures, lotions, salves and powders. The average number of preparations used in each case was four, but if the dermatitis was recurrent or of long duration the number would exceed ten, even twenty or more. About half of all the remedies tested were prescriptions of proprietaries. In this series 40 per cent of the patients (160) showed positive reactions to one or more of the remedies used. In 35 per cent (56 cases) the remedies had been used in the therapy of dermatitis pedis. As the number of remedies applied increased, so did the incidence of positive reactions. Any patient who shopped long enough would sooner or later apply a salve, tincture, lotion or powder that would contain an irritant or sensitizer.

DERMATITIS CONTACT FROM THERAPEUTIC CHEMICALS

The offender in 35 per cent of the patients (56) was one of the organic mercurials. The contact in 39 was the feet and in 17 other cutaneous locations. Merthiolate was responsible for 90 per cent of the reactions. Phenol was the cause in 14 per cent (22 cases). The feet were the contact in 10 cases and other cutaneous areas in the remaining 12. Ethyl aminobenzoate (benzocaine) caused reactions in 8 per cent (12 cases). In 6 of these the contact was the feet and in the remaining 6 cases other areas of the body. In the remaining 43 per cent (69 cases) the tars and derivatives were the offenders.

The organic mercurials, phenol and ethyl aminobenzoate caused 2 to 4 plus reactions. The latter was characteristic of the mercurials. The sulfonamides were frequently suspected, but positive reactions were not obtained. The tars and derivatives are now being studied. The reactions obtained were usually 1 plus, and about one third of these showed a fine vesiculation. This type of reaction was found in those patients who had used therapeutic tars for a long time or had had contact with industrial tars, oils and distillates. Sunlight can activate a patch test site weeks later into a pruritic, vesicular dermatitis, which involutes slowly. It seems that the therapeutic tars are going to behave on the skin as their close chemical relatives have behaved in industry: a cause of acute and chronic dermatitis. Sollmann [1] dismisses the tars as irritants. From present indications the word "sensitizer" might also be added. Perhaps the quip that skin patients are never ill and never get well may have in the latter an unrecognized truth—therapeutic chemicals inducing recurrences and chronicity in dermatoses. Lane [2] found tar, mercury, iodine, salicylic acid and cresol compounds as frequent causes of therapeutic dermatitis. In a series of 50 cases he found that 70 per cent were due to sulfonamides, 10 per cent to mercury, 10 per cent to unknown agents and the remaining 10 per cent to other drugs. In another series of 125 cases he found that 35 per cent were caused by sulfonamides and 45 per cent by unidentified therapeutic agents. It is believed that the high incidence of reactions to mercury in this locality is explainable on the basis of the extent of use. Merthiolate is applied to dermatologic lesions ranging from insect bites to neoplasms. Its use in the hospital, especially in surgery, amounts to almost bathing in it.

1. Sollmann, Torald: A Manual of Pharmacology, Philadelphia, W. B. Saunders Company, 1942, p. 651.
2. Lane, C. Guy: Cutaneous Disturbances Caused by Therapeutic Measures, J. Omaha Mid-West Clin. Soc. **6**: 45-50 (April) 1945.

Here's the Proof . . . Impartial and Scientific
Let The Experiences Of Others Convince You
FUNGI Both Friend and Foe
WARNING! Danger lurks on every surface not hygienically clean. Don't let your feet or your family's feet be infected by the spores of this invisible enemy!
"I nearly put my foot in it!"
A new advance in the prevention and treatment of dermatophytosis
ATHLETE'S FOOT MENACE!
KEEP FEET FIT!
Two way ATHLETE'S FOOT TREATMENT
For the Relief of ATHLETE'S FOOT
FOR RINGWORM and ATHLETE'S FOOT
Guaranteed To Kill Athlete's Foot Germs On Contact
PRURITUS Relieved—
Don't Claw Itchy Eczema
Kills Athlete's Foot Germs On Contact
Keep Perspiring Feet Dry and Sweet
Free! If Itchy Skin not eased in Five Minutes-
SAMPLES AND LITERATURE ON REQUEST
Athletes Foot Germ
YOU PROBABLY HAVE ATHLETE'S FOOT or will get it
Check Itching . . . First Application
RELIEVES ITCHING AND BURNING
WATERY BLISTERS BETWEEN TOES? This Often Helps Quickly
ATHLETES FOOT GERM
Hits The Spot When You Itch
MULTIPLE RELIEF FOR SKIN LESIONS
double action
'INVISIBLE' LIQUID
SKIN RASHES
MEAN CASES of ATHLETE'S FOOT
Doctor's Speedy Relief For Sore, Hot, Aching Feet
NEW! SULFA DRUG FORMULA USED FOR ATHLETE'S FOOT
WARD OFF INFECTION ALLAY PAIN PROMOTE HEALING
Doctor's Relief For Sore, Fiery, Painful Feet
STOP Scratching
Skin Torment
MADE ESPECIALLY TO RELIEVE TORTURE AND KILL GERMS THAT CAUSE ATHLETE'S FOOT
Specific for the Superficial Fungous Infection ATHLETE'S FOOT
"I've never found anything like it!"
FIGHT ATHLETE'S FOOT DAILY!
ITCH Checked in a JIFFY
works wonders for ATHLETE'S FOOT
A SICK ROOM HELP SHE CAN'T FORGET!
Quickly Comforts Itching, Burning of
ITCHING CAN BE CONTROLLED But NOT WITH THESE
STOP THE URGE TO SCRATCH. ELIMINATE THE ITCHING.
ATHLETES FOOT . . . and what you ought to know about it.
Drench those open cracks at once
Cracks between your toes worn of danger
Stop fierce, maddening itch caused by
Relieve Foot or Toe-Itch Quick
Which of these common skin irritations annoys you?
Chronic and Resistant Fungus Infections
"FACTORY FEET"
Relieves Itching Quickly
RELIEVE THE INTOLERABLE ITCHING
KILLING 5 TYPES OF FUNGI CAUSING ATHLETE'S FOOT
DESTROY THE RESPONSIBLE FUNGI
Watch That Itch Go Right To Sleep

Fig. 1.—A few of the admonitions to daub dermatitis pedis.

DERMATITIS CONTACT, MERCURY SENSITIZATION

During the first week of this study [3] a patch test with a burn ointment produced a bullous lesion at the testing site and a palm sized flare of patchy erythema around the patch testing adhesive. The follicular involvement was well defined, and similar lesions appeared simultaneously on the other arm and also over the anterior part of the thorax. On repatch testing with each chemical in the remedy, the sample containing the organic mercurial reproduced the aforementioned observations. The mercurials have been the only therapeutic chemicals encountered so far that can produce reactions of this type. They are thus considered "sensitizers" of high index because bullous reactions were obtained in dilutions of 1:1,000,000 with either organic or inorganic mercurials. The determining factor in these cases for positive reactions to the various mercurials and their respective dilutions has been the degree of sensitization. A highly sensitized person will react to organic and inorganic compounds, a low sensitized person will react say to aqueous merthiolate 1:5,000 but not to the tincture, mercuric chloride, metaphen, mercurochrome or ammoniated mercury.

The history in every case of a positive patch test to a mercurial in a remedy revealed a previous exposure: mercurial therapy of skin diseases, mercury antiseptics during surgery or delivery at the hospital, the painting of cuts, scratches and minor burns with mercury antiseptics.

The tissue reactions of sensitization are observed most commonly on the hand, forearm, feet and legs. An area of dermatitis or injury is treated with a mercurial. During the next three to five days, healing or involution seems to be progressing. Suddenly a ring of erythema appears, followed by edema and soon the wound gapes, the base is pushed to the surface, a creamy pus exudes or the area of dermatitis shows an exacerbation with weeping and spreading. Usually these reactions are looked on as "infection" and more of the mercurial is applied, or something else is tried which may also contain mercury. If another mercurial is applied, in a few days there is apt to be noted a fine, vesicular, faintly erythematous dermatitis spreading peripherally from the site of injury or dermatitis. The vesicles may become bullae and the surrounding dermatitis hemorrhagic.

This type of dermatitis involutes slowly, and the initial lesion takes weeks to heal. The extent of the skin sensitization and the severity are determined by future mercury contacts. The sensitization seems to affect primarily the hair follicles and the sweat glands. Dermatitis contact from mercurials has been observed

Fig. 2.—Remedies available in this locality for self treatment of dermatitis pedis.

3. Gaul, L. E.: Overtreatment Dermatitis, J. A. M. A. **127**: 439 (Feb. 24) 1945; The Danger of Home Remedies to the Skin, Hygeia **33**: 280 (April) 1945.

from potassium mercuric iodide,[4] mercurochrome,[5] mercurophen,[6] amalgam filling,[7] cinnabar,[8] ammoniated mercury,[9] merthiolate,[10] phenylmercuric nitrate,[11] yellow mercuric oxide,[12] metaphen [13] and mercury bichloride. The different mercurials inducing dermatitis would seem to indicate that in the mercury ion resides the sensitization properties. The mercury ion plus the tissue reaction—erythema, edema, vesiculation and especially exudation—seem to be a requisite for sensitization. The intensity of the tissue sensitization reaction seems to parallel the index of sensitization. Those patients showing an intense local reaction—appreciable edema, bullae, pustules and hemorrhage—usually reacted to high dilutions of organic and inorganic mercurials. A mercurial patch test (forty-eight hours) can become suddenly positive after as long as a month.

of a sensitizing chemical. The observations over the past year further confirm the importance of such a warning. The normal skin is apparently well equipped to withstand mercury contacts. An injured skin or skin shorn of its protective layers, particularly a skin already inflamed by contactants, is favorable soil for mercury to induce sensitization. Many of the patients in this series had used a mercurial on an existing contact dermatitis. Vehicles that alter the normal p_H of the skin or affect the lipoid coating or damage the horny layer or chemicals carried by the vehicles that effect similar changes or react with mercury may enhance the sensitization reaction. When Sulzberger [14] added salicylic acid 5 per cent to ammoniated mercury 5 per cent, 50 per cent of the patients tested showed positive reactions, whereas salicylic acid 10 per cent in petrolatum and ammoniated mercury 10 per cent in petrolatum rarely produced reactions. Dermatitis from mercury can be a disabling skin disease, the chronicity may be great and the hazard seems constantly present that renewed contacts will produce increasingly severe recurrences. Physicians, hospitals, clinics and first aid stations who use mercurial antiseptics risk inducing such sensitization. It is significant that the War Department Technical Bulletin of Medicine (TB MED 147), March 1945, announced the abandonment of local use of any chemical agent in a wound for its supposed antiseptic effect in the prevention or treatment of infection.[15]

TABLE 1.—*Chemicals in Dermatologic Textbooks and Literature*

Tars and Derivatives	Metallic Compounds	Plant Products	Alcohols	Animal Products
Acriflavine	Aluminum sulfate	Anthralin (synthetic)	Ethyl	Lanolin
Benzoic acid	Aluminum acetate	Acetic acid	Propyl	Lard
Benzene	Aluminum subacetate	Chrysarobin	Cetyl	Soap
Betanaphthol	Alum exsiccatum	Camphor	Acetone	Sodium propionate
Brilliant green	Ammoniated mercury	Birch tar	Glycerin	Undecylenic acid
Cresol	Boric acid	Oil cinnamon	Ethyl chloride	Magnesium chlorophyllin
Chlorthymol	Borax	Oil clove	Chloral hydrate	Copper chlorophyllin
Cetyl tar distillate	Bentonite	Oil olive	Formaldehyde	Potassium stearate
Fuchsin	Bismuth subnitrate	Oil of cade	Chloroform	Potassium palmitate
Gentian violet	Zinc oxide	Menthol		Stearic acid
Ethylparaoxybenzoate	Zinc superoxide	Eucalyptol		Cod liver oil
Phenyl acrylic acid	Zinc sulfate	Tincture myrrh		Calcium propionate
Tetrachlorophenol	Zinc chloride	Tincture benzoin		
Phenol	Zinc peroxide	Tannic acid		
Salicylic acid	Zinc nitrate	Starch		
Ichthammol	Tincture iodine	Cottonseed oil		
Resorcinol	Silver nitrate	Opium		
Liquor carbonis detergens	Sodium borate	Lemon juice		
Thymol	Sulfur	Balsam of Peru		
Paraffin	Talc	Wax		
Petrolatum	Potassium carbonate	Penicillin		
Sodium benzoate	Phenyl mercuric nitrate	Oil of rose		
Sulfadiazine	Merthiolate			
Sulfathiazole	Metaphen			
Metacresyl acetate	Mercuric iodide			
Naftalan	Mercuric chloride			
Pyrogallol	Cadmium chloride			
Tar	Copper sulfate			
Methylene blue	Copper acetate			
Picric acid	Mercurochrome			
Zephiran	Sodium thiosulfate			
	Sodium hypochlorite			
	Lead acetate			
	Sulfuric acid			
	Hydrochloric acid			
	Chlorazene			
	Chlorine water			
	Antimony and potassium tartrate			
	Sodium perborate			
	Sodium chloride			

A "WARNING" ON TOPICAL MERCURIALS

In an earlier report [3] it was suggested that all preparations containing mercury designed for cutaneous application carry a "warning" on the label of the presence

THE CHEMICAL ASSAULT AGAINST DERMATITIS PEDIS

Since 1916, over a quarter of a century, dermatitis pedis has been subject to topical chemical therapy. It is still being approached from this angle, new "treatment ideas" blossoming out each month. Table 1 contains

4. Kesten, Beatrice, and Laszlo, Elizabeth: Dermatitis Due to Sensitization to Contact Substances, Arch. Dermat. & Syph. **23:** 221 (Feb.) 1931. Lawrence, John, and Strauss, M. J.: Dermatitis Due to Potassium Mercuric Iodide, ibid. **30:** 76 (July) 1934.

5. Pascher, Frances, and Silverberg, Mabel G.: Hypersensitivity to Mercurochrome Shown by Patch Test, Arch. Dermat. & Syph. **27:** 408 (March) 1933.

6. Gross, E. R.: Dermatitis Venenata, Arch. Dermat. & Syph. **37:** 689 (April) 1938.

7. Traub, E. F., and Holmes, R. H.: Dermatitis and Stomatitis from Mercury Amalgam Fillings, Arch. Dermat. & Syph. **38:** 349 (Sept.) 1938.

8. Novy, F. G.: A Generalized Mercurial (Cinnabar) Reaction Following Tattooing, Arch. Dermat. & Syph. **49:** 172 (March) 1944.

9. Samitz, M. H.: Eczematous Contact Dermatitis Due to Mercurials, Arch. Dermat. & Syph. **50:** 10 (July) 1944. Gibel, Harry, and Kramer, Benjamin: Idiosyncrasy to Mercury Preparations in Childhood, Am. J. Dis. Child. **68:** 155 (Aug.) 1943.

10. Ellis, F. A., and Robinson, H. M.: Cutaneous Sensitivity to Merthiolate and Other Mercurial Compounds, Arch. Dermat. & Syph. **46:** 425 (Sept.) 1942. Hollander, Lester: Contact Dermatitis Produced by Tincture of Merthiolate, ibid. **50:** 123 (Aug.) 1944.

11. Wilson, D. J.: Eruption Due to Hydrophen Ointment, Nebraska M. J. **24:** 70 (Feb.) 1939.

12. Desten, B. M.: Conjunctivitis and Blepharitis Due to Yellow Oxide of Mercury, Arch. Ophth. **6:** 582 (Oct.) 1931.

13. Belote, G. H., and Marshall, D.: Metaphen Dermatitis, J. Michigan M. Soc. **34:** 172 (March) 1935.

14. Sulzberger, M. B.: Dermatologic Allergy, Springfield, Illinois, and Baltimore, Charles C Thomas, Publisher, 1940, p. 425.

15. Local Application of Crystalline Sulfonamides Discontinued, Medicine and the War, J. A. M. A. **128:** 597 (June 23) 1945.

TABLE 2.—*Chemicals in Proprietaries* *

No. Name	Tars and Derivatives	Metallic Compounds	Plant Products	Alcohols	Animal Products
1. Absorbine Jr.	Thymol (vehicle ?)	Iodine	Absinthin, menthol, echinacea, calendula		
2. Amoline powder	Methyl parahydroxybenzoate, thymol	Boric acid	Menthol, eucalyptol		
3. Athlecaine	Thymol, ethyl aminobenzoate, salicylic acid	.....	Sandarac	Ethyl, isopropyl	
4. Alazone	Resorcinol (base ?)	Calamine			
5. Athlete's foot lotion	Salicylic acid, benzoic acid (vehicle ?)	.....	.....	Glycerin	
6. Allen's foot ease	Methyl parahydroxybenzoate, benzoic acid, thymol	Boric acid, bentonite, alum, talc			
7. Booth's balm	Thymol, creosote, lithofein, petrolatum	.....	Guaiacol, sanitas, eucalyptol, cocoa butter		
8. B. F. I. powder	Zinc phenolsulfonate, mono-n-amylhydroquinone ether, thymol	Bismuth formic iodide, potassium alum, boric acid, magnesium carbonate, talc, zinc oxide	menthol, eucalyptol, lactose		
9. Benoxal	Benzoic acid, salicylic acid	Zinc oxide			
10. Blue Star ointment	Benzoic acid, salicylic acid, petrolatum	.....	Methylsalicylate	.....	Lanolin
11. Benzox	Hydroxyquinoline benzoate, benzocaine, beta-naphthol-benzoate, salicylic acid (base ?)	Titanium dioxide, sulfur	Camphor, menthol		
12. Campho-phenique	Phenol, mineral oil	.....	Camphor		
13. Campho-phenique powder	Phenol	Boric acid, talc	Camphor		
14. Carbo fung	Phenol, fuchsin, resorcin				
15. Dorklof athlete's foot combination	Resorcinol, phenol, fuchsin, (base ?)	Boric acid, ammoniated mercury, sodium thiosulfate	.....	Alcohol	
16. Daxalan	Crude coal tar (emollient ?)	Zinc oxide	Starch		
17. Domeboro ointment	Duponol (base ?)	Aluminum acetate, boric acid	.....	Cetyl alcohol	
18. Domeboro tabs	.....	Aluminum sulfate, calcium acetate			
19. Dr. Sholl's solvex	Benzoic acid, salicylic acid, thymol (base?)				
20. Dr. Sholl's sulfa-solvex	Sulfathiazole, salicylic (base ?)	Talc	Methyl salicylate		
21. Dr. G. H. Tichenor's Antiseptic	(Menstruum ?)	.....	Methyl salicylate, arnica		
22. Desenex ointment	(Base ?)	.....	.....	.....	Zinc undecylenate, undecylenic acid
23. Desenex powder	.....	(Base ?)	.....	.....	Zinc undecylenate, undecylenic acid
24. D. D. D.	Thymol, phenol, salicylic acid	.....	Methyl salicylate	Alcohol, glycerin, chloral hydrate	
25. Desitin ointment	Petrolatum	Zinc oxide, talc	.....	.....	Lanolin, cod liver oil
26. Derma-Medicone	Benzocaine, oxyquinoline sulfate, ichthammol (base ?)	.....	Ephedrine sulfate		
27. Doan's ointment	Benzocaine, oxyquinolin benzoate, chlorothymol, phenol, petrolatum	Zinc oxide	Tannic acid, vegetable oil	Chlorobutanol	Lanolin
28. Dr. Sholl's	Salicylic acid	Talc, boric acid	Methyl salicylate		
29. Exoderm ointment	Salicylic, benzoic acid (base ?)	Boric acid			
30. Exoderm	Salicylic acid, benzoic acid	Boric acid, aluminum silicate, talc			
31. Epidermicide	Salicylic acid, thymol, benzoic acid	.....	.....	Solution of formaldehyde	
32. Epidermis fitosis	Salicylic acid, benzoic acid, thymol, gentian violet	.....	.....	Chlorobutanol, alcohol	
33. Epitosis ointment	Salicylic acid, benzoic acid, thymol, petrolatum	Phenylmercuric nitrate			
34. First Aid powder	Phenol, thymol, zinc phenol sulfonate	Bismuth oxyiodide, bismuth subgallate, bismuth subcarbonate, boric acid, zinc oxide, magnesium carbonate, alum	Menthol, eucalyptol	.....	Allantoin
35. Foot balm	Benzoic acid, salicylic acid, chlorothymol (base ?)	Boric acid	.....	Isopropyl	
36. Gebauer's	.....	Phenyl mercuric chloride	.....	Ethyl chloride	Lanolin
37. Hetoxin powder	Hydroxyquinoline benzoate, benzoic acid	Boric acid, talc			
38. H. F.	Benzoic acid, salicylic acid	.....	Pine oil	Acetone	
39. Hydrophen	Ortho phenyl phenol (base ?)	Phenyl mercuric nitrate			
40. Korium powder	Salicylic acid, methyl parahydroxybenzoate, oxyquinoline sulfate, chlorothymol	Boric acid, zinc oxide	Thyme oil		
41. Korium ointment	Salicylic acid, benzoic acid, benzocaine, methyl parahydroxybenzoate (base ?)	.....	Menthol		
42. Kerolysin	Benzoic acid, salicylic acid, chlorothymol (base ?)				

* Douglas F. Salisbury, Phar.D., Walgreen Company, checked each product for purchasability by any person in this locality.

TABLE 2.—*Chemicals in Proprietaries—Continued*

No. Name	Tars and Derivatives	Metallic Compounds	Plant Products	Alcohols	Animal Products
43. Kopertox	Petrolatum hydrocarbons	Copper naphthenate			
44. Lan-O-Derm	Salicylic acid, crude coal tar	Yellow mercuric oxide, zinc oxide			Lanolin
45. Lysol	Cresylic acid, aryl phenols			Glycerin	Soaps
46. Lock's	Hydroxyquinoline sulfate, salicylic acid	Aluminum silicate, magnesium silicate, boric acid			
47. Marathon powder	Salicylic acid, oxyquinoline benzoate	Boric acid, sodium perborate, bentonite, talc			Zinc stearate
48. Mazon	Benzoic acid, salicylic acid (base ?)	Mercury salicylate			Sodium stearate
49. Myalete	Thymol	Boric acid, metaphen, kaolin	Cinnamic aldehyde		
50. Many Purpose Cream	(Formula not declared)				
51. Merseptal Tincture	(Vehicle ?)	Phenylmercuric borate			
52. Merseptal solution	(Vehicle ?)	Phenylmercuric borate			
53. Merseptal cream	(Vehicle ?)	Phenylmercuric borate			
54. Oilzo	(Vehicle ?)				Triolein ozonide
55. Phe-ni-mer	(Base ?)	Phenylmercuric nitrate			
56. Phy-tox	Salicylic acid, benzoic acid (base ?)	Arsenic trioxide, mercury salicylate			
57. Penathol	Salicylic acid, benzoic acid, thymol, triceresol			Acetone, alcohol	
58. Pragmatar	Cetyl tar distillate, salicylic acid (base ?)	Sulfur			
59. Phenitol	(Base ?)	Phenylmercuric nitrate			
60. Poslam	Phenol, salicylic acid (base ?)	Sulfur, zinc oxide	Oil of cade, menthol		
61. Quinsana*	Hydroxyquinoline	Sodium perborate, sodium borate, boric acid, kaolin, talc, sodium bicarbonate			
62. Remedoil	(Formula not stated)				
63. Red Arrow lotion	Salicylic acid, benzoic acid, coal tar			Alcohol	
64. Red Arrow	Chlorthymol	Boric acid, kaolin,	Menthol	Paraformaldehyde	
65. Salicresin Fluid	Salicylic acid, benzoic acid, secondary amytricresols (base ?)	Orthohydroxyphenylmercuric chloride		Isopropyl	
66. Salicresin cream	Salicylic acid, benzoic acid, secondary amytricresols (base ?)	Orthohydroxyphenylmercuric chloride		Isopropyl	
67. Soretone	Salicylic acid, beta ethyl hexyl phenol		Methyl salicylate, absinth in tansy oil, menthol	Acetone	
68. Sopronol solution				N-propyl alcohol	Sodium propionate, propionic acid
69. Sopronol ointment	(Base ?)			N-propyl alcohol	Sodium propionate, propionic acid, zinc stearate
70. Sopronol powder		Talc base			Calcium propionate
71. Schlueter's pink ointment	Phenol, benzoic acid petrolatum	Zinc oxide, calamine	Camphor, sassafras, oil of cade		Lanolin
72. Tarbonis	Liquor carbonis detergens (base ?)				
73. Tetterine	(Formula not declared)				
74. Tenapo	Oxyquinoline sulfate, benzoic acid, thymol	Sodium thiosulfate, boric acid			
75. TenOSix	Resorcinol		Oils	Glycerin, isopropyl alcohol	
76. Thalloine ointment	Coal tar distillate, petrolatum	Zinc oxide, phenylmercuric nitrate			Lanolin
77. Zephiran	Benzyl trialkonium chloride				
78. Zemo ointment	Iodobenzoic acid (base ?)	Bismuth subnitrate, zinc oxide, boric acid	Menthol, methyl salicylate		
79. Zemo Fluid	Phenol, benzoic acid	Boric acid, potassium nitrate, borax	Methyl salicylate, menthol	Alcohol, glycerin	
80. Zemacol	Salicylic acid, phenol	Orthochlormercuriphenol, zinc acetate			
81. 3XB liquid	Salicylic acid, benzoic acid			Alcohol	
82. 3XB	Thymol iodide	Bismuth subnitrate, boric acid			
		SUPPLEMENT			
83. B. G. O. ointment	Phenol, salicylic acid, petrolatum	Zinc oxide, iodoform, calamine, sulfur	Menthol		Lanolin
84. Blis.To.Sol	Eosin, thymol, salicylic acid	Mercury perchloride		Alcohol, acetone, glycerin	
85. Caloten	Phenol (base ?)	Calamine, zinc oxide			
86. Calmitol	(Base ?)		Camphorated chloral, menthol, hyoscyamine oleate	Alcohol, ether, chloroform	
87. Enzo-cal	Benzocaine (base ?)	Calamine, zinc oxide			
88. Fungi-Rex	Benzoic acid, salicylic acid, phenol, thymol, petrolatum				
89. Guadine		Iodine, potassium iodide	Guaiacol	Glycerin	
90. H. V. 222	Phenol, thymol, salicylic acid, benzoic acid	Boric acid	Menthol	Ethyl, isopropyl	

* Douglas F. Salisbury, Phar.D., Walgreen Company, checked each product for purchasability by any person in this locality.

TABLE 2.—*Chemicals in Proprietaries—Continued*

No.	Name	Tars and Derivatives	Metallic Compounds	Plant Products	Alcohols	Animal Products
91.	Iso-Par	Isoparaffinic acids, hydroxybenzyl dialiphatic amines, petrolatum	Titanium dioxide	.....	Cetyl	Beeswax, lanolin
92.	Liquid mycozal	Salicylic acid, benzoic acid, chlorobutanol, malachite green	.....	.....	Isopropyl	
93.	Medicone foot cream	Thymol, salicylic acid, tar distillate (base ?)	Sulfur	Menthol, camphor		
94.	Nixoderm	(Formula not stated)				
95.	Obtundia powder	Metacresol, benzoic acid, salicylic acid, methyl ester parahydroxybenzoate	Boric acid, titanium dioxide, talc	Camphor		
96.	Presto	Salicylic acid, benzoic acid, thymol	.....	....	Alcohol	
97.	Peterson's	Phenol (base ?)	Zinc oxide	Camphor, tannic acid, balsam fir		
98.	Ped	Benzoic acid, salicylic acid, chlorthymol (vehicle ?)				
99.	Te-ol	Benzoic acid, salicylic acid	.....	Camphor	Alcohol	
100.	Thio-borate	.....	Sodium thiosulfate, boric acid, zinc stearate	Oil lavender, oil eucalyptus		
101.	Two-Way liquid	Salicylic acid, benzoic acid	Iodine	.....	Acetone	
	Two-Way powder	Salicylic acid	Boric acid, sodium thiosulfate			
102.	Teneicide	Salicylic acid, phenol, thymol	Iodine, zinc sulfocarbonate	Camphor	Chloroform, formaldehyde, alcohol	
103.	Silverroyl	Methyl salicylate	.....	Oil origanum, oil turpentine, acetic acid	Acetone	Eggs
104.	Sever's ointment	Benzoic acid, salicylic acid	Zinc oxide	.....	.....	Lard
105.	Sporeen	Thymol, sodium 2-hydroxy di-phenyl (base ?)	.....	Menthol	Glycerin	
106.	Wiley's	Salicylic acid, betanaphthol, oxyquinoline sulfate	Sulfur	Oil ricini		

* Douglas F. Salisbury, Phar.D., Walgreen Company, checked each product for purchasability by any person in this locality.

a partial listing of the chemicals reported to be of value in dermatophytosis. It is not a chemical classification but more a means of segregation and presentation. An attempt was made to classify pharmacologically these chemicals, but the mass of conflicting data led to abandonment. If one year a certain chemical was found fungicidal and of therapeutic value, the following years it was shown to be worthless. Equally conflicting and depicting the "testimonial treatment idea" was the concentration or strength of topical chemicals. Phenol varied from 1 to 50 per cent, silver nitrate from 0.25 to 20 per cent, salicylic acid from 1 to 40 per cent, mercury bichloride from 1:2,000 to 1:10,000. The proper vehicle to use seemed a matter of yearly trends or whims as well as the chemicals to be incorporated. The tars were praised in some reports, the heavy metals and dyes in others, or the aluminum family and essential oils were superior and finally lemon juice worked wonders. The latest attractions are fatty acids.

Hopelessly mired was the subject of prevention and prophylaxis. Certain writers prescribed a routine as complicated as Hasselbalch's equation and urged Americans to enter the bathroom with a bottle of antiseptic in each hand, to fight contagious, infectious fungi. Other writers called all this useless nonsense and considered it potentially harmful. The fungicidal foot bath passed through its period as a means of prevention to a means of actually spreading infectious fungi. Really to stamp out the dermatophytes it has been proposed that shoes, slippers, stockings and the floors of shower baths and bathrooms be impregnated with fungicidal chemicals. In spite of all these chemical maneuvers the intertriginous dermatophytes failed to yield, so roentgen and radium rays, refrigerants and iontophoresis were brought to bear, aided and abetted by sandpaper, pumice stone and an assortment of knives, scrapers and motor driven burrs. The surgical removal of toe nails and sometimes finger nails has been practiced as necessary, but recently it was proposed that the toe nails—a cosmetic abomination anyway—be permanently eradicated. If the surgeons enter the fight against the dermatophytes, certainly the little toes, perhaps the others and even the foot may be removed: a type of dispatch bound to cure.

Unfortunately this prevention, prophylaxis and therapy frustration has not been kept in the confines of the research laboratory or the sphere of clinical investigation. It has spread into the practices of physicians [16] throughout the country. Certain medical periodicals arriving gratis each month will display eight to fifteen pages of topical preparations, all chemically different but each a specific for dermatophytosis. Pamphlets arrive also with quotations from eminent medical authorities who found this a specific or that a specific "to eliminate fungous infection ringworms without irritation." Furthermore, and herein lies the tragedy, it has spread into the American home. The daily, weekly and monthly periodicals display an urgent message how to diagnose, prevent and treat athlete's foot. The chemicals to choose from in this locality for self treatment are segregated in table 2. A review of the formulas is in reality a chronological treatment history of tinea pedis. Each remedy at one time had an authoritative medical reference. One report, pittanced or commandeered, is sufficient evidence to market and promote a remedy. If later reports fail to substantiate the first, these are ignored. The promotion is diligently fostered, resulting in outdated and discredited chemical hodgepodges, vying for sales appeal on the retail shelves. In a report [17] prepared for the Council on Pharmacy and Chemistry it was

16. We were interested in learning the number of dermatologic patients seen by physicians in this locality. A questionnaire was mailed. Over one hundred replies were received. The average was 8 per cent. The diseases of the skin that physicians are called on to care for stands out in sharp contrast to the training given in medical schools. The average from ten schools was 0.016 per cent of the medical curriculum. The comments written in long hand on the replies were critical of the training given and bemoaned its inadequacy.

17. Weidman, F. D.; Emmons, C. W.; Hopkins, J. G., and Lewis, G. M.: War and Dermatophytosis, J. A. M. A. **128**: 805 (July 14) 1945.

stated that only one substance, boric acid, was safe for public use. A canvass by Weidman of his local dermatologic society disclosed that Whitfield's ointment carried a large factor of danger. Twenty-nine of the remedies contained benzoic and salicylic acids. This report considered particularly dangerous preparations containing iodine, mercury, sulfur or sulfonamides. One remedy contained sulfathiazole, six contained sulfur, nineteen contained mercury, nine contained iodine or its compounds. Eighteen of the remedies contained phenol and five ethyl aminobenzoate. These also should be considered dangerous preparations.

THE DIAGNOSIS OF DERMATITIS PEDIS

The symptoms itching, stinging, smarting and burning of the pedal skin indicate that the skin of the foot has become ill. The signs, color, erythema, vesiculation, pustulation, maceration, scaling, fissuring and so on help to indicate the kind and severity of the illness. These symptoms and signs require a diagnosis just as do symptoms and signs referable to the abdomen. The report by Montgomery and Casper [18] describes the signs and incidence of causative fungi in tinea pedis. J. H. Mitchell [19] deplores the tendency to treat all acrodermatitis as ringworm without establishing a diagnosis by microscopic examination. G. M. Lewis [19] adds emphasis to this and considers cultural studies mandatory. Ormsby and Montgomery [20] state that it is essential that the clinical diagnosis be confirmed by a microscopic examination in every case. Dermatitis pedis requires, in addition to the foregoing, a routine blood, urine and serologic examination. Until a diagnosis is made, nursing care of the pedal skin is all that is indicated, and contraindicated are the remedies in table 2. Directing attention to diagnosis and away from treatment will cause a decline in the incidence of overtreatment dermatitis.

COMMENT

Several decades ago the bowel was being symptomatically dosed. Each abdominal complaint had myriads of potions and concoctions all of which, if only given a trial, would effect curative miracles. The bowel has had its therapeutic renaissance, but the skin, its symptoms and even its signs of disease are being symptomatically daubed and painted. A chemical and pharmacologic exposure of the oral cure-alls caused their mysterious and divinatory healing powers to vanish. Many were worthless, others actually or potentially dangerous. When the cutaneous oils, creams, salves, lotions, tinctures and powders are chemically and pharmacologically exposed, many of them will prove worthless. Many are already actually and potentially dangerous. It took the tragedies from self medication to end oral dosing; tragedies from self treatment of skin diseases are mounting. Lane [21] states that improper therapy causes more visits to the dermatologist than any other skin disease, a sad commentary for an era of enlightened therapeutics.

It is urged that the Council "clean house" in the field of cutaneous drugs as it did with oral and parenteral drugs: tear apart the topical concoctions and define each cutaneous chemical in terms of dosage, indications and contraindications, declare each therapeutic agent according to its chemical and pharmacologic properties. If benzoic acid is a useful topical drug, define its dosage —per cent strength—indications and contraindications. If it has no specific uses, it should be discarded. When this is done for each chemical used on the skin, the long lists of prescriptions in textbooks for this or that dermatosis, the host of proprietaries, will be superfluous. Physicians will know, depending on the symptoms and signs presented by the skin, the treatment indicated. The proper vehicles should also be defined and kept as simple as possible so that adverse reactions will be more easily apprehended.

Methods of testing cutaneous drugs need definition. Letters arrive weekly from manufacturers stating that their product was tested by an eminent authority and found safe. This is true for the normal skin, whose protective barriers (the p_H, the lipoid coating, the horny mantle) withstood the twenty or forty-eight hour contact; but what about a week or two week contact and, crucially important, the effects of the product on a skin shorn of its protective mantles or eczematized? The product in contact with living epidermal cells, nerve corpuscles and the cutis can be violently toxic, yet harmless when outside the cutaneous protective barriers. The history of this or that remedy helping for a few days, followed by a sudden flare-up, has been consistently noted. All during the course of this investigation it has been disconcerting to see the close similarity between cutaneous medicinals and the chemicals in industry proved to be a leading cause of dermatitis, such as tars, oils, greases, resins, solvents, soaps and alkali.

SUMMARY

The past-treatment patch test in over 400 dermatologic patients showed positive reactions in 40 per cent to one or more of the remedies used.

The chemicals in remedies the most frequent cause of dermatitis were mercury, phenol and ethyl aminobenzoate.

The investigations disclosed that all mercurials should carry a "warning" on the label of the presence of a sensitizer.

The cutaneous tissue reaction denoting sensitization or irritation from topical chemicals has been frequently overlooked and often wrongly considered infection.

Dermatitis pedis requires a differential diagnosis, and to apply or advocate a remedy on the assumption that fungi are the cause promotes and lends countenance to the abhorred practice of daubing.

Lest an episode like table 2 occur again, it is urged that dermatologists take steps to prevent the commercial commandeering of scientific reports and formulas and to set up within present organizations referees working with the Council to judge the maturity of new therapies and diagnostic procedures before they reach untrained hands and produce the treatment tragedies now so evident.

Excellent postgraduate training in the chemistry and pharmacology of topical chemicals awaits physicians who patch test the remedies used—observing the usual precautions—before prescribing further topical treatment.

A vigorous and intelligently conceived educational program setting forth the tenets of preventive and hygienic dermatology, upholding and fostering this program with both hands, not daubing with one, will do much to remove the curse of contactant and overtreatment dermatitis from the skin of Americans.

509 Hulman Building.

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STREPTOCOCCUS s. b. e. IN SUBACUTE BACTERIAL ENDOCARDITIS

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The subject of the present report is an investigation of organisms recovered from the blood of patients with subacute bacterial endocarditis which were obtained from various sources. The identities of the first 106 consecutive cultures submitted are presented in table 1.

Of interest in this study was the isolation of an apparently new variety of nonhemolytic streptococcus in 41 instances (39 per cent); this organism is now designated Streptococcus s. b. e. Apart from the fact that it had not been recovered or recognized previous to this study, its high incidence warranted intensive investigation. Its cultural properties, relationship to other streptococci and serologic classification were studied in detail.

The significant cultural characteristics of Streptococcus s. b. e. are briefly as follows:

1. Greening occurs on blood agar in twenty-four hours.
2. Hydrolyzes arginine in forty-eight hours.
3. Ferments inulin in one week.
4. Does not ferment raffinose.
5. Does not produce large mucoid colonies on sucrose agar.
6. About 90 per cent of the strains fall in one serologic type, as shown by the precipitin test with cell extracts made according to the Lancefield technic.[1]

Streptococcus s. b. e. is not a miscellaneous collection of "unclassifiables" but apparently a rather homogeneous unit having a unique combination of biologic characteristics as well as considerable immunologic homogeneity. Apart from the washings of an infected sinus, it has not been possible thus far to isolate a similar streptococcus from the human mouth and throat.

This variety of streptococcus not only has a rather characteristic and distinctive combination of physiologic properties but about 90 per cent of the strains which have been tested fall in one serologic type. The few strains thus far studied which do not belong to this serologic type fall in one additional type.

Included in the 41 cases of subacute bacterial endocarditis infected with the new type of streptococcus were a group of 19 patients recruited from a consecutive, unselected series of 102 cases treated with a combination of penicillin and heparin.[2] The refractory character of the organism under investigation is strikingly apparent from a comparative study of treatment statistics, recovery percentage, mortality rate and incidence of recurrence. A forthcoming report [3] deals with the clinical behavior and prognostic import of Streptococcus s. b. e., which was chiefly responsible for the treatment failures (table 2). It was found that intensive, massive penicillin treatment was mandatory in order to terminate the disease in subacute bacterial endocarditis patients infected with Streptococcus s. b. e. The optimum dosage plan for patients thus infected is an uninterrupted span of treatment for eight weeks with daily intravenous administration of at least two million Oxford units of penicillin, the heparin being incorporated in the usual manner. The prompt identification of Streptococcus s. b. e. as the causative agent in subacute bacterial endocarditis, facilitated by the use of the presently available diagnostic serum, has been a life-saving measure.

TABLE 1.—*Streptococci from Subacute Bacterial Endocarditis*
(106 Cultures from Various Sources)

Species or Variety	Number	Comment
Streptococcus s. b. e.	41	A hitherto undescribed variety of nonhemolytic streptococcus
Streptococcus mitis	39	The common throat viridans streptococcus
Streptococcus bovis	11	Similar to so-called "Bargen streptococcus"
Streptococcus fecalis	5	Group D; nonhemolytic enterococci
Streptococcus mastitidis	4	Group B; 3 hemolytic, 1 nonhemolytic
Group G streptococci	1	"Nonminute" variety; hemolytic
Unclassified streptococci	5	Not identified with any known species

TABLE 2.—*Streptococcus s. b. e. as a Factor in Prognosis in a Series of 102 Treated Cases of Subacute Bacterial Endocarditis*

Causative Organism	Number of Cases	Treatment Successful		Recurrence	Fatal Outcome
		Number	Per Cent		
Streptococcus s. b. e.	19	8	42	5	7*
Streptococcus mitis	17	15	88	0	2
Streptococcus bovis	3	3	100	0	1†

Streptococcus s. b. e.: A hitherto undescribed variety of nonhemolytic streptococcus. Strains belonging to this type show distinct homogeneous cultural and immunologic reactions

Streptococcus mitis: The common throat viridans streptococcus

Streptococcus bovis: Similar to so-called "Bargen streptococcus"

* Includes 1 case of terminal Staphylococcus aureus infection following apparent recovery from Streptococcus s. b. e. endocarditis.

† This successfully treated patient subsequently died of congestive heart failure; at autopsy the mutilated valve cusps were completely fibrosed and free from bacteria.

CONCLUSION

A hitherto undescribed type of nonhemolytic streptococcus with distinctive biologic characteristics and considerable immunologic homogeneity has been identified as the causative agent in refractory cases of subacute bacterial endocarditis. The clinical significance of these bacteriologic findings will be the subject of a forthcoming report.

From the Department of Laboratories and the Department of Medicine, Jewish Hospital of Brooklyn; the Laboratory of Bacteriology, Cornell University, Ithaca, N. Y., and the Department of Clinical Medicine, Cornell University Medical College, New York.

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The Level of Lactic Acid in the Brain.—The level of lactic acid in the brain (as found by analysis of tissue frozen in situ) does not passively follow the level in the blood but is regulated primarily by metabolic conditions within the tissue. In morphinized dogs the cerebral lactic acid is increased by hypoxia below a critical level of 11 to 13 per cent oxygen in the respired air. Phosphocreatine begins to decompose below a critical level of 7 per cent oxygen. The lactic acid and phosphocreatine levels also seem to be related to the functional activity of the neurons or the oxidative rate.—Stone, W. E.; Webster, J. E., and Gurdjian, E. S.: Chemical Changes in the Brain and Gasometric Studies of the Blood in Experimental Head Injury, in Trauma of the Central Nervous System, Baltimore, Williams & Wilkins Company, 1945.

NOCTURNAL GASTRIC SECRETION IN DUODENAL ULCER

Studies on Normal Subjects and Patients, with Their Bearing on Ulcer Management

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This report deals with 150 nocturnal gastric secretion studies performed on 38 normal persons (73 studies) and 29 patients with duodenal ulcer (77 studies), with particular attention being paid to "hypersecretion" and "hyperacidity" and their bearing on management of patients with duodenal ulcer.

It is generally believed that patients with duodenal ulcer have a more copious secretion of gastric juice (hypersecretion) of a higher hydrochloric acid concentration (hyperacidity) than normal persons of the same sex and age. Both clinicians and surgeons usually focus their attention on this hypersecretion-hyperacid factor in the management of patients with duodenal ulcer. Indeed, a number of gastroenterologists and gastric surgeons, believing that the hypersecretion-hyperacid factor is chiefly responsible for the pathogenesis of both the duodenal ulcer and the postoperative jejunal ulcer, have recommended new ways and means of combating or eliminating this factor. Palmer and Templeton [1] believe that the "excessive continued night secretion" plays an especially important role in the failure of ulcers to heal. They therefore employed radiation therapy over the upper two thirds of the stomach with the view of inactivating the hydrochloric acid producing cells. Connell [2] performed fundusectomy as a method of diminishing the acid secreting surface. Klein [3] and Winkelstein [4] suggested, and Berg [5] and Colp [6] subsequently performed subdiaphragmatic anterior vagotomy along with subtotal gastric resection to prevent the postoperative jejunal ulcers which are being reported in increasing numbers following subtotal gastric resection. They state that hypersecretion of the acid gastric juice is responsible for recurrences following this operation. Recently Dragstedt and his associates [7] performed supradiaphragmatic section of the vagus in an effort to reduce the hypersecretion-hyperacid factor in ulcer patients. Andrus [8] implanted a pedicle graft of jejunum in the wall of the stomach to exert a direct inhibiting effect on the acid secretory mechanism. Ivy [9] and his group are working with enterogastrone, and they [10] and Sandweiss and his associates [11] are experimenting with urogastrone with the hope of controlling the apparent hypersecretory state of ulcer patients.

Because "hypersecretion," "hyperacidity" and the acid gastric juice are generally considered as playing important roles in the pathogenesis of duodenal ulcer and in postoperative jejunal ulcer, we initiated this study to obtain comparative data on patients with duodenal ulcer and on normal subjects.

We conducted our gastric secretory studies during the night, not only because less contaminated gastric juice may thus be obtained for study, but chiefly because we were interested in the concentration and volume of gastric juice during that period of seven or eight hours of the night when normally the stomach is devoid of food and when gastric secretion is uncontrolled. We employed a fairly well balanced meal (which included meat and fish as a source of protein) and gave it at 6 p. m., since this meal given at this time, we believed, would most nearly represent a normal gastric stimulant, and the study would thus most closely represent the normal gastric secretory status during the night. To be more certain of the variations in hydrochloric acid concentration and of the variations in the volume of gastric juice, we obtained hourly samples of gastric juice (from 7 p. m. to 8 a. m.) for titration, complete aspirations of the stomach at the end of each hour from 12 midnight to 8 a. m. and (in other subjects) the total volume of gastric juice from 12 midnight to 7 a. m. by continuous gastric aspiration.

METHOD OF STUDY

Fifty-five night secretion studies were performed on 7 normal young men (19 studies), 8 normal young women (15 studies) and 7 young men with uncomplicated duodenal ulcer (21 studies). All ulcer patients had only mild ulcer distress and presented uncomplicated duodenal ulcers when the studies were conducted. All subjects were ambulatory. All were permitted to have their usual noon meal but not permitted to eat any food until 6 p. m., when their stomachs were completely emptied by aspiration. The volume of the gastric contents were measured and the juice was titrated with 0.01 normal sodium hydroxide for free and total hydrochloric acid, Topfer's reagent and phenolphthalein being used respectively as indicators. Immediately after aspiration the subjects were given an evening meal which was especially prepared. It consisted of foodstuffs which are fairly representative of the average American dietary but which contained a minimum of cellulose. This type of meal was designed to eliminate difficulties in aspiration through the duodenal tube. In addition, the consistency and physical state of the foods were kept constant. This is an important factor in the use of test meals, since Friedman and Pincus [20] have shown

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Paper published under the auspices of the Section on Gastro-Enterology and Proctology.

Mary M. Harrington, M.A., director of dietetics at Harper Hospital, and members of the department gave valuable assistance during the course of this study.

This article has been abbreviated for publication in THE JOURNAL with omission of most of the comment on the physiologic phase of night secretion, tables, charts, graphs and other sections, which will appear in the authors' reprints and also in an article in Gastroenterology now in press.

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that a difference of as much as 32 per cent exists in the gastric secretory response to a standard meat meal when the meat is ingested as ground beef or as small cubes.

Table 1 lists the various foods of the meal, giving the weight as well as the proportions of protein, fat, carbohydrate and the caloric values. Hourly samples of

TABLE 1.—*Meal With Beef Broth and Fish*

	Grams	Protein	Fat	Carbohydrate	Calories
Bouillon (beef broth)	100	1.0	...	...	4
Soda crackers	10	0.9	0.9	7.3	42
Broiled whitefish	120	27.5	7.8	...	180
Slice lemon	20	0.2	0.1	1.8	9
Mashed potatoes	100	2.0	0.1	19.0	85
Butter	10	0.1	8.5	...	77
Strained orange juice	200	1.2	...	26.2	110
Vanilla ice cream	50	1.3	3.4	5.6	58
White bread	40	3.6	0.8	20.8	104
Butter	10	0.1	8.5	...	77
20% cream and coffee	25	0.6	4.6	4.1	48
Sugar	15	...	...	15.0	60
Milk	200	6.6	8.0	10.0	138
Total		45.1	42.7	109.8	992

gastric contents obtained from 8 p. m. until 12 midnight were titrated for free and total hydrochloric acid. At 12 midnight and once hourly thereafter (at the end of each hour) until 8 o'clock the next morning the stomach was completely aspirated, note being made of the volume of juice obtained and the acid concentration of each specimen. The subjects remained in bed at Harper Hospital throughout the night and slept in the interim between aspirations.

To determine what effects meat and fish proteins (when included in the noon meal instead of the evening meal) have on the nocturnal gastric secretions, we conducted 21 additional night secretion studies on the aforementioned 7 ulcer patients with only the following change from the foregoing routine: The meal referred to in table 1 was given at 12 noon instead of at 6 p. m. The 6 p. m. evening meal during these 21 additional studies differed from the other evening meal in that the subjects were allowed no meat extractives (beef broth) and fish, considered to be strong stimulants of gastric secretion. Table 2 lists the nature and amount of each food as well as the protein, fat, carbohydrate and caloric values. We sought to determine whether there would thus be a decrease in the nocturnal volume of gastric juice and a lowering in the acid concentration when the meat extractives and fish were included in the noon meal instead of in the evening meal. The total protein content, however, was practically the same for all of the meals.

In the foregoing 76 studies the gastric juice was aspirated only once hourly from 12 midnight until 8 a. m. We subsequently conducted 74 additional night secretion studies (on 23 normal males and 22 male patients with duodenal ulcer) using the meal listed in table 1 at 6 p. m. but employing continuous suction as the method of aspiration from 12 midnight to 7 a. m. after a preliminary complete emptying of the stomach at 12 midnight. These patients slept undisturbed throughout the night. The reasons for this study will be discussed later.

RESULTS

I. *Concentration of Hydrochloric Acid*

1. In all instances (chart 1) samples of the gastric contents taken after the evening meal showed a much lower titratable acidity than before the meal. This may be accounted for by both the diluting effect of the meal liquids and the well known neutralizing and acid adsorbing power of the meal solids. It is only after 9 p. m. that an elevation in the gastric acidity usually began to occur; presumably by this time much of the gastric contents have been evacuated. Actually, traces of food were frequently found present in the gastric samples until 11 or 12 p. m. and it is only after this period that the gastric contents can be considered to be least contaminated by food and more truly representative of gastric juice.

2. The curves showing average concentration of hydrochloric acid in both normal persons and ulcer patients show no pronounced variations from each other. After 1 a. m., however, there is a tendency for a higher acid concentration in the normal male group (chart 1).

3. Composite curves showing averages are misleading. A peak in the concentration of acid in one subject (or during one night study) may be leveled out by a low concentration in another subject (or in the same subject on another night), and so on. We therefore present several graphs which we found to represent certain patterns. These are shown in patterns 1, 2, 3 and 4 (charts 2, 3, 4 and 5).

4. As a rule in both normal persons and ulcer patients two and sometimes three peaks in concentration of free acid usually occur, one peak between 10 and 11 p. m., another but smaller peak between 1 and 2 a. m. and a third, still smaller, at approximately 5 a. m. After 5 in the morning the concentration of free acid is nearly always very low (pattern 3, chart 4).

5. At times both in normal persons and in ulcer patients a curve similar to that of pattern 4 is obtained, a rise in the concentration of acid at 9 p. m. reaching its peak at 10 or 11 and remaining approximately at that level until 4 or 5 in the morning.

6. The nocturnal curves of free hydrochloric acid concentration vary considerably. Not only is there variation from one normal person to another and from one ulcer patient to another, but also variations in the same person on different nights, even though the same meal is given at 6 p. m. and the studies are conducted under similar conditions (chart 6).

TABLE 2.—*Meal Without Beef Broth or Fish*

	Grams	Protein	Fat	Carbohydrate	Calories
Cream pea soup					
Flour	5	0.5	0.1	3.8	18
Purée fresh peas	50	3.4	0.2	0.9	51
Milk	100	3.3	4.0	5.0	69
Soda crackers	10	0.9	0.9	7.3	42
Cottage cheese	120	23.0	1.0	4.8	120
Mashed potatoes	100	2.0	0.1	19.0	85
Butter	10	0.1	8.5	...	77
Vanilla ice cream	50	1.3	3.4	5.6	58
White bread	40	3.6	0.8	20.8	104
Butter	10	0.1	8.5	...	77
20% cream and coffee	25	0.6	4.6	4.1	48
Sugar	20	...	...	20.0	80
Grapefruit juice	100	0.6	0.2	12.0	52
Total		39.4	32.3	103.3	881

7. We were able to obtain gastric juice after midnight in all of our 76 studies. In only 2 studies (1 a normal female and the other a male ulcer patient) did the gastric juice fail to show free hydrochloric acid after 12 midnight. In these 2 studies the samples between 8 p. m. and 12 midnight showed free hydrochloric acid.

8. Assuming, as other workers have, quite arbitrarily, that a concentration of over 70 clinical units is abnormal, it will be noted from table 3 that a peak of 70 clini-

cal units or over is found in 53 per cent of the night secretion studies in the normal males, compared with 40 per cent for the normal females, 24 per cent for the ulcer patients with the meat-fish protein diet at the evening meal and 33 per cent for the ulcer patients who had the meat-fish protein diet at the noon meal. If 80 clinical units or over is considered abnormal, then the percentages are 47, 20, 14 and 5 respectively.

On the basis of this small series of subjects and limited number of studies (76 studies) we cannot draw the general conclusion that ulcer patients as a rule have a higher concentration of acid during the night than normal persons.

II. *Volume of Gastric Juice*

(A) Complete Aspiration Once Hourly, On the Hour, from 12 Midnight To and Including 8 A. M. The following summary is presented following an analysis of chart 7 and tables 4 through 7:

1. On the average, a greater volume of gastric juice may be aspirated at the end of each hour from ulcer patients as compared with the average volume obtained from normal subjects (chart 7).

2. The average hourly volume of gastric juice decreases after 11 p. m. until it reaches its lowest level between 5 and 7 in the morning (chart 7).

3. On the average, higher volumes of gastric juice were obtained from ulcer patients as compared with those of normal subjects when the amounts of the eight hourly aspirations for the night were totaled (table 4). In approximately 25 per cent of the ulcer patients we were able to aspirate 300 cc. or more during the eight nocturnal aspirations. In not one of our normal subjects were we able to obtain 300 cc. of gastric juice during the similar eight aspirations (table 5).

4. When the output of free acid is expressed as milligrams of hydrochloric acid it will be noted from table 6 that of the studies on ulcer patients with the meat-fish proteins at the evening meal we obtained 300 mg. of hydrochloric acid or more during the eight night aspirations in 43 per cent of our studies. In 21 per cent of our studies on normal males and in only 10 per cent of our studies on ulcer patients with meat-fish protein foods at noon was 300 mg. (or more) of hydrochloric acid obtained.

5. It will be recalled that following the 6 p. m. meal the stomach was completely aspirated for the first time at 12 midnight. The data show (table 7) that the average amount of gastric contents aspirated at 12 midnight was approximately twice as much for the ulcer patients as for the normal subjects.

On the basis of these data it is apparent that (*a*) at 12 midnight the volume of gastric juice in the stomach of ulcer patients is greater than in the stomach of normal subjects, (*b*) more juice on the average may be aspirated at the end of each hour from the stomach of ulcer patients than from the stomach of normal persons (when aspirations are done hourly) and (*c*) the total volume obtained during the eight nocturnal aspirations is also greater for ulcer patients.

(B) Aspiration by Continuous Suction from 12 Midnight to 7 A. M. In the studies that have been presented, the stomach was aspirated only once each hour during the eight hour period of the night (from 12 midnight to 8 a. m.). As a greater volume of gastric juice was aspirated from patients with duodenal ulcer, the question naturally arose whether the greater volume was due to hypersecretion or whether it was the result of delayed emptying of the stomach. To appraise the latter factor, 74 additional night secretion studies were performed on 23 normal young men (39 studies) and 22 young male ulcer patients (35 studies) using the meal listed in table 1 at 6 p. m. but aspirating the stomach by means of continuous suction from 12 midnight to 7 a. m., after the stomach had previously been completely emptied at 12 midnight. We believed that by this method the factor of delayed gastric emptying, if present, could thus be detected.

The data indicated that: 1. The average volume of gastric juice aspirated from the ulcer patients during the seven hours of the night by continuous suction is approximately the same as that obtained from the normal persons. On the average, 485 cc. of gastric juice was obtained from the ulcer patients and 446 cc. from the normal subjects.

2. One ulcer patient appeared to show a tendency to "hypersecrete." During four night secretion studies on this patient we aspirated 1,143, 1,130, 350 and 1,310 cc. (the third night study was conducted four days after the second study). Were the studies on this 1 patient excluded, the average volumes for the two series of subjects would be 446 cc. for the normal subjects and 383 cc. for the ulcer patients.

3. The average number of milligrams of hydrochloric acid during the seven hours of continuous suction is slightly higher for the ulcer patients (773 mg.) when compared with that of the normal subjects of the same sex (603 mg.). However, when the 4 studies on the 1 ulcer patient who showed a tendency to "hypersecrete" are excluded, the average number of milligrams of hydrochloric acid obtained from the normal subjects is 603 compared with 501 for the ulcer group (tables 8 and 9).

It would thus appear that male patients with duodenal ulcer do not secrete in response to a standard meal a greater volume of gastric juice from 12 midnight to 7 a. m. than do normal male subjects.

COMMENT

I. *On Night Secretion Studies.*—1. Evidence presented heretofore by other investigators has indicated that patients with duodenal ulcer, as a rule, tend to show a hypercontinuous gastric secretion. Our results, however, tend to show that this is not the case with the group of subjects studied by us during the night. Rather, reference to tables 8 and 9 shows that the normal male group on the average has a slightly greater secretion than the ulcer patients of the same sex. The same tendency is noted in the maximum acidity values obtained hourly during the night (table 3) and in the average hourly hydrochloric acid concentration after 1 a. m. (when the data are analyzed statistically the variations between the normal subjects and patients with duodenal ulcer are not significant). However, it must be borne in mind that our series of patients did not present very acute ulcer "attacks" during the course of study.

2. It is of interest to note that the 2 ulcer patients (table 9, cases 2 and 14) in whom we found 2,500 mg. of hydrochloric acid or over during the seven hour period of the night presented more or less intractable ulcers clinically, though no complicating factors were found on physical or roentgen examinations. During the last three years each of these patients has had shorter symptom-free intervals and longer periods of ulcer distress and responded less favorably to medical management. We are wondering whether the hydrochloric acid output in milligrams during the night is of greater

clinical significance than the volume of secretion alone or the concentration of hydrochloric acid alone. More extensive work will need to be done on these and similar patients before definite conclusions may be drawn.

3. It would be difficult to compare our results on nocturnal human gastric secretion with those obtained by other workers. An analysis of their studies shows that each of the authors used a different test meal, gave the meal at different hours of the day or afternoon and aspirated samples of the gastric contents at varying periods of the night. The amounts of gastric juice aspirated by the other workers and the degrees of acidity obtained by them would naturally show variations as compared with ours.

II. *On Medical Management of Ulcer Patients.*—Our present day ulcer regimen aims mainly to combat the acid gastric juice factor. Frequent feedings of bland foods nearly always make up the ulcer diet, not only because these foods are nonirritating and leave the stomach readily, but also because of their neutralizing effect on acid. Meat and fish proteins are eliminated from the diet during the active ulcer period chiefly because of their stimulating effect on gastric secretion. Alkalis or aluminum hydroxide are nearly always prescribed because of their neutralizing effect on hydrochloric acid. Also atropine or belladonna is frequently used not only because of their antispasmodic effect but also because the paralyzing effect on the vagus nerve depresses gastric secretion of neurogenic origin.

There is nothing in our results that conflicts with this regimen. While ulcer patients may not secrete any more gastric juice or hydrochloric acid than normal human beings, our evidence indicates that they retain more of the juice and acid in their stomachs at any one time. This is presumably due to the delay in the emptying of the stomach, probably caused by spasm or edema or by the disturbed intestinal physiology which Berk, Rehfuss and Thomas [24] and Patterson and Sandweiss [25] have shown to exist in patients with duodenal ulcer, or perhaps by flattened or reversed gastroduodenal pressure gradients more recently described by Quigley [25a] and referred to by Ingelfinger.[25b] However, whatever the cause, and regardless of what part hydrochloric acid plays in the etiology of ulcer, it is universally accepted that acid is irritating to the ulcer. Cornell, Winkelstein and Hollander,[15] Dragstedt, Palmer, Schafer and Hodges,[7] Connell,[2] Berg,[5] Colp,[6] Andrus,[8] Ivy and his colleagues,[9] Val Dez,[16] Lannin and Baronofsky,[26] Kiefer,[27] Hinton and Church [28] and many others focus their attention on the acid gastric juice. Palmer [29] states that the free acid is probably responsible for the night pains by its action on the ulcer bed. The acid, therefore, should be neutralized to achieve comfort and to permit healing.

However, the usual regimen is confined to the day, and little attention is paid to the acid gastric juice during the night. In the light of our data it appears to us that, if hydrochloric acid is the chief factor in ulcer distress and delayed healing, more attention should be focused on the nocturnal phase of gastric secretion, regardless of how the ulcer patient "feels" during the night and regardless of the volume of gastric juice and concentration of hydrochloric acid. Free hydrochloric acid in the stomach during the night, even if the volume is less and the concentration is lower, may undo in part what neutralization accomplishes during the day. During the night there is no food in the stomach to have a diluting effect and to act as a neutralizing and adsorbing agent. While an effective gastric secretory depressant is still not available,[30] it appears to us that Winkelstein's [31] continuous intragastric milk-drip method and Woldman and Rowland's [32] modification of the latter by the use of aluminum hydroxide are to date the best means of controlling the nocturnal acid gastric juice. Milk and cream feedings during the night also are effective. These may be administered through a Levine tube while the patient is asleep.

Frequently, particularly in the later stages of the ulcer regimen, the diet of ulcer patients is increased to include meat broths, white fish, white meat of chicken, lamb chops and similar foods. Our data appear to indicate that it is advisable to include these foods in the noon meal rather than the evening meal. The total amount of acid (milligrams of hydrochloric acid) aspirated during the night was less for ulcer patients who had beef broth and fish during the noon hour than those who had these foods at 6 p. m. (table 6).

III. *On Surgical Management of Ulcer Patients.*—During the course of years many operations have been performed in an effort to "cure" patients with duodenal ulcer. Chief of these are gastrojejunostomy, pyloroplasty (Finney, Horsley or Judd type), local excision (cautery or knife), gastroduodenostomy, excision and gastroenterostomy, pyloric excision and gastroenterostomy, excision of the ulcer combined with reconstruction of the pyloric outlet, antral exclusion, fundusectomy, Billroth first and second partial resections, subtotal gastrectomy (Polya and Hoffmeister types), partial duodenectomy and subtotal resection, cholecystogastrostomy, denervation of the adrenal glands and ligation of the gastric arteries (physiologic gastrectomy).

Subtotal gastric resection is the treatment of choice at present when surgery is undertaken. It was at first thought that by subtotal gastric resection achlorhydria would result and the postoperative jejunal ulcer would thus be eliminated. However, recent reports indicate that jejunal ulcer and hemorrhage follow even this procedure. Hurst [33] stated in 1928 "I have seen several cases of secondary ulceration after partial gastrectomy and have collected over a hundred from the literature." (He did not describe the extent of gastrectomy.) Berg,[5] in a series of 225 subtotal gastrectomies for duodenal ulcer, found that 3.1 per cent of his patients developed symptoms due to new ulcerations and that

24. Berk, J. E.; Rehfuss, M. E., and Thomas, J. E.: Effect of Ulcer Acidity and Neutralizing Ability in Duodenal Bulb, Arch. Int. Med. **70:** 959-974 (Dec.) 1942.

25. Patterson, T. L., and Sandweiss, D. J.: The Relationship Between Gastroduodenal Motility Phases and Symptoms Associated with Duodenal Ulcer in the Human, Am. J. Digest. Dis. **9:** 375-383 (Nov.) 1942.

25a. Quigley, J. P.: Modern Explanation of Gastric Emptying Mechanism, Am. J. Digest. Dis. **10:** 418 (Nov.) 1943.

25b. Ingelfinger, F. J.: The Late Effects of Total and Subtotal Gastrectomy, New England J. Med. **231:** 321 (Aug. 31) 1944.

26. Lannin, B. G., and Baronofsky, I. D.: Surgical Treatment of Ulcer, Staff Bull., Univ. Minnesota Hosp. **15:** 58-66, 1943. Lannin, B. G.: Experimental Evaluation of a Satisfactory Operation for Ulcer, Surgery **17:** 712-741 (May) 1945.

27. Kiefer, E. D.: Jejunal Ulcers and Recurrent Hemorrhages After Gastrectomy for Peptic Ulcer, J. A. M. A. **120:** 819-824 (Nov. 14) 1942.

28. Hinton, J. W., and Church, R. E.: Selection of Operation for Patients with Gastric and Duodenal Ulcer, J. A. M. A. **120:** 816-818 (Nov. 14) 1942. Church, R. E., and Hinton, J. W.: Follow-Up Results in Subtotal Gastric Resection for Ulcer, Am. J. Digest. Dis. **9:** 317-321 (Oct.) 1942.

29. Palmer, W. L., and Heinz, T. E.: Mechanism of Pain in Gastric and Duodenal Ulcers: Further Observations, Arch. Int. Med. **53:** 269-308 (Feb.) 1934.

30. Ivy.[9] Gray, Wieczorowski and Ivy.[10] Sandweiss, Sugarman, Friedman, Saltzstein and Farbman.[11]

31. Winkelstein, A.: New Therapy of Peptic Ulcer: Continuous Alkalinized Milk Drip into the Stomach, Am. J. M. Sc. **185:** 695-703 (May) 1933.

32. Woldman, E. E., and Rowland, V. C.: A New Technic for the Continuous Control of Acidity in Peptic Ulcer by the Aluminum Hydroxide Drip, Am. J. Digest. Dis. **2:** 733-736 (Feb.) 1936.

33. Hurst, A. F.: The Late Results of Partial Gastrectomy for Gastric and Duodenal Ulcer, Lancet **2:** 680 (Sept. 29) 1928.

10.2 per cent of the cases continued with mild general complaints, chiefly "vagotonic" (80.5 per cent of his cases had a follow-up of only one to five years). Colp [6] already reported 40 recurrences following 502 subtotal gastric resections (follow-up one to seventeen years; detailed follow-up not included in discussion). Kiefer,[27] in a series of 173 cases of subtotal resections for duodenal ulcer, found 6.9 per cent of the cases with jejunal ulcers and 4.6 per cent of cases with subsequent hemorrhages, a total of 11.5 per cent of failures following subtotal gastric resections for duodenal ulcer (postoperative follow-up six months to eight years, average between three and four years [33a]). He adds "The hope that this radical operation would solve the problem of postoperative jejunal ulceration, which has brought gastroenterostomy into disfavor, has been displaced by the realization that this complication can follow any operation which joins gastric mucosa to small intestinal mucosa." Hinton and Church [28] analyzed the end results in 97 cases of subtotal resections (average postoperative observation 2.9 years). They report 64 per cent cured and 24 per cent improved (12 per cent failures). Gatewood [34] reported 3 instances in his series of 30 subtotal resections, and Garrett [35] 2 in his series of 26. One of us (D. J. S.) has so far seen 3 cases with recurrences among 13 of his patients who were thus operated on and on whom he had a satisfactory follow-up. Aaron [36] cited a case in which symptoms continued after a gastroenterostomy, later after a partial resection and still later after a subtotal gastric resection. "At the time of the fourth operation the patient had a perforated peptic ulcer just about where the esophagus joins onto the stomach."

More recently Rienhoff [37] reported on the surgical treatment of 260 consecutive cases of duodenal ulcer. He states: "Regardless of the type of operation performed or the operator, where jejunal and gastric mucosa are brought together in the presence of acid chyme a certain percentage of patients will suffer from postoperative complications similar in all respects to the original complications of the primary ulcer for which operation was performed."

Persistence of acid is thought by many to be responsible for the failures following subtotal gastric resection.

Of late, as a result of failure to produce achlorhydria in many of the subtotal gastric resection cases, new surgical procedures have been recommended to control or eliminate the hydrochloric acid factor. Berg [5] and Colp [38] have cut the anterior fibers of the vagus nerve, subphrenically, in addition to the operation of subtotal gastrectomy. Dragstedt, Palmer, Schafer and Hodges [7] recently reported supradiaphragmatic section of the vagus nerves. Andrus [8] has implanted a pedicle graft of jejunum in the wall of the stomach. These operations, as was the case with many of the aforementioned operations, were devised in an effort to decrease or eliminate entirely the acid factor in patients with duodenal ulcer.

However, the fact is that the foregoing newer surgical procedures do not eliminate entirely the acid gastric juice. Winkelstein,[4] Dragstedt and his associates,[7] Klein and his associates [39] and Crohn [40] state that some patients still secrete hydrochloric acid following supradiaphragmatic vagotomy or infradiaphragmatic vagotomy in conjunction with partial or subtotal gastrectomy. Grossman, Dutton and Ivy [41] have shown that implantation of a jejunal flap into the stomach of dogs does not significantly alter the acid secretory response of the stomach to histamine stimulation in the dog. In addition, Kolouch, Dubus and Wangensteen [42] also present evidence suggesting that the jejunal graft is inefficient in controlling gastric and peptic secretion.

If hydrochloric acid plays a major part in the recurrence of duodenal ulcer, and if acidity is responsible for the postoperative jejunal ulcer, then merely decreasing the volume of acid gastric juice and merely lowering the hydrochloric acid concentration are not sufficient to prevent recurrences. During the night the continuous secretion of acid juice, regardless of its volume and its concentration, may still produce its corrosive effect.

With Crohn,[40] therefore, we question whether the results obtained warrant the risk involved in these new surgical procedures. Already Dragstedt and his associates,[7] in their report on supradiaphragmatic section of the vagus nerves, state that "in 1 patient, similarly operated on in our institution by another surgeon, the ulcer pain recurred together with an active crater." An analysis of the 15 cases more recently reported by Dragstedt and Schafer [43] shows that 6 of the 15 patients continue to have distress. Gastroenterostomies were performed subsequently on 3 of these patients. Their report deals with a follow-up of only one to twenty-one months. Winkelstein [4] claims that cutting the vagus fibers above the diaphragm "may lead to harmful procedures in the abdomen." He advocates cutting the subanterior ones (subphrenically) in addition to partial or subtotal gastrectomy. Crohn,[40] however, states "I have never been convinced that cutting the anterior vagus is sufficiently adequate to warrant its inclusion in the routine operation of subtotal gastrectomy for ulcer. I have seen Dr. Colp, in 2 cases, cut both anterior and posterior vagus nerves above the diaphragm. No material benefit seemed to accrue to the patient, nor was the acidity materially reduced." He adds, further, "Great difficulty is encountered in cutting all of the filaments of both vagi above the diaphragm. To be successful it would require practically a complete circumcision of the esophagus; in 1 case at postmortem it was observed that in spite of the greatest diligence at the time of the operation several intercommunicating fibers between the vagus plexus seemed to remain intact. In 1 case which I observed, a supradiaphragmatic section of the vagus nerves did not clinically benefit a gastrojejunal ulcer."

Weinstein, Colp, Hollander and Jemerin [43a] reviewed the literature on gastric vagotomy and presented their findings in 6 patients on whom vagotomy was per-

33a. Kiefer, E. D.: Personal communication to the authors, June 8, 1945.

34. Gatewood, A. M.: Immediate Mortality and Late Result of Operations for Peptic Ulcer, Tr. Am. S. A. **48:** 142-145, 1930.

35. Garrett, cited by Kiefer.[27]

36. Aaron, A. H.: Personal communication to the authors, July 24, 1941.

37. Rienhoff, W. F.: An Analysis of the Results of the Surgical Treatment of 260 Consecutive Cases of Chronic Peptic Ulcer of the Duodenum, Ann. Surg. **121:** 583-599 (May) 1945.

38. Colp, R., cited by Crohn.[40]

39. Klein, E.; Aschner, P. W., and Crohn, B. B.: The End Results of Partial Gastrectomy for Primary Gastric and Duodenal Ulcers, Tr. Am. Gastro-Enterol. A. **38:** 197-205 (May) 1933.

40. Crohn, B. B., in discussion on papers of Berk and Frediani, Ivy [9] and Dragstedt, Palmer, Schafer and Hodges,[7] Gastroenterology **3:** 466 (Dec.) 1944.

41. Grossman, M. I.; Dutton, D. F., and Ivy, A. C.: An Attempt to Confirm the Alleged Inhibitory Effect on Gastric Secretion of Jejunal Pedicle Grafts in the Wall of the Stomach, Surgery **17:** 685-692 (May) 1945.

42. Kolouch, Fred, Jr.; Dubus, A. T. S., and Wangensteen, O. H.: The Pedicled Jejunal Transplant into the Gastric Wall, Surgery **17:** 667-685 (May) 1945.

43. Dragstedt, L. R., and Schafer, P. W.: Removal of the Vagus Innervation of the Stomach in Gastroduodenal Ulcer, Surgery **17:** 742-749 (May) 1945.

43a. Weinstein, V. A.; Colp, R.; Hollander, F., and Jemerin, E. E.: Vagotomy in the Therapy of Peptic Ulcer, Surg., Gynec. & Obst. **79:** 297-305 (Sept.) 1944.

formed either alone or in conjunction with some other operation. In 2 of these cases complete vagotomy was attempted. They report that, (*a*) experimentally, little diminution in the nervous phase of gastric secretion is to be expected, while the other (chemical) gastric secretory phases are entirely unaffected; (*b*) in none of the 6 cases was clearcut evidence of beneficial therapeutic effect obtained; (*c*) a definite increase in operative risk and morbidity was encountered; (*d*) partial vagotomy does not influence the nervous phase of gastric secretion significantly, and even if it did, the other secretory phases may overshadow the nervous phase to such an extent as to render it unimportant. They conclude: "Accordingly, gastric vagotomy alone cannot be recommended as a therapeutic procedure: complete vagotomy because of its risk, difficulty of accomplishment, possible effect on motility and only questionable influence on secretion; and partial vagotomy because of the absence of any beneficial effects whatever."

It is to be borne in mind that the secretion of acid gastric juice is only one of many functions under vagus control. The organs supplied by the vagus are numerous and their functions of inestimable value. The action of the vagus on these organs is still not clearly known for man. While the duodenum and the pancreas probably receive vagus nerve fibers by other routes, there is a direct innervation of these organs by branches of the vagus which are sectioned in the foregoing operative procedures. Evaluation of such vagotomy operations on functions such as pancreatic secretion must be made. An additional point to be remembered is the fact that section of the vagus nerve abolishes various reflexes of visceral origin which are definitely protective in character (such as the "receptive relaxation" of the duodenum).

With reference to the Andrus operation, Saltzstein and Kurtz [44] definitely proved that such an implantation, in Mann-Williamson dogs, does not prevent the formation of the typical jejunal ulcers. Of 6 Mann-Williamson dogs with a pedicle graft of the jejunum implanted in the stomach wall, 5 developed Mann-Williamson ulcers; the sixth dog, while not showing a jejunal ulcer, showed a large ulcer in the center of the jejunal flap that was implanted in the stomach.

These experiences surely dictate conservatism when surgery is considered or is undertaken for duodenal ulcer in man.

At present we know of no medical or surgical procedure that will completely eliminate the nocturnal gastric acid factor for any appreciable period of time in all ulcer patients, unless it is total gastrectomy. But even then are we sure that jejunal ulcers might not follow as a result of trauma, tissue susceptibility or ulcer diathesis?

SUMMARY

While the number of studies in our series are too few for definite conclusions, our data on 150 night secretion studies conducted on both normal subjects and patients with duodenal ulcer, nevertheless, warrant the following impressions:

1. Both normal persons and patients with duodenal ulcer secrete acid gastric juice during the night even when the 6 p. m. meal consists of foods usually allowed ulcer patients.

2. Following a fairly well balanced meal at 6 p. m. (which included beef broth and fish) the nocturnal gastric juice from patients with duodenal ulcer is approximately of the same hydrochloric acid concentration as is the gastric juice from normal subjects of the same sex.

3. Following this meal at 6 p. m. the nocturnal volume of gastric juice in patients with duodenal ulcer (as obtained by continuous suction) is on the average not greater than that of normal subjects of the same age and sex.

4. When intermittent single aspirations are performed during the night (not continuous aspiration) a greater quantity of gastric juice is found in the stomach of duodenal ulcer patients as compared with that found in the stomach of normal subjects of the same sex. The greater volume is due, however, not to a state of hypersecretion but probably to a state of delayed gastric emptying.

5. Only 1 of our 22 ulcer patients may be interpreted as probably having a tendency to gastric hypersecretion. More studies by means of continuous suction on both ulcer patients and normal subjects are essential before definite conclusions may be drawn.

6. If hydrochloric acid is the chief factor in ulcer distress and delayed healing, it is essential that more attention be focused on the nocturnal phase of gastric secretion regardless of how the patient "feels" during the night and regardless of the volume of gastric juice and concentration of hydrochloric acid. While ulcer patients may not secrete any more gastric juice or hydrochloric acid than normal persons, our data indicate that ulcer patients retain more of the juice and acid in their stomachs at any one time. During the night, therefore, the free hydrochloric acid in the stomach may undo in part what neutralization accomplishes during the day, as during the night there is no food in the stomach for the meal liquids to have its diluting effect and for the meal solids to perform the neutralizing and acid-adsorbing power. Feedings during the night are therefore essential.

7. When meat and fish are added to the diet of ulcer patients it is advisable to include these foods during the noon meal instead of during the evening meal. When the noon meal (instead of the evening meal) includes these foods, the stomach contains less free acid during the night.

8. Conservatism is advisable when surgery is considered or is undertaken for duodenal ulcer in man.

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ABSTRACT OF DISCUSSION

DR. WALTER C. ALVAREZ, Rochester, Minn.: This study is an important one because it has long seemed probable that one of the most important factors in the production of ulcer is the continuance of secretion in the stomach after buffering food has all passed into the bowel and the patient has gone to sleep. The next question is: If the patient with ulcer continues to secrete acid gastric juice after his stomach is empty why does he do it? The answer is to be found in a statement made to me by dozens of wives of men with ulcer who say that the husband is a very restless sleeper who seems usually to be half awake. Often he tosses or groans or talks or grinds his teeth until the wife has to move to a separate room. Many an ulcer patient has told me that half of his brain seems to keep going all night so that he wakes with his day's work all planned. Perhaps, then, it is a characteristic of many men with ulcer that during sleep some lower part of the brain does not quiet down properly but keeps sending off impulses, some of which keep secretion going in the stomach. There are a number of reasons why the observations of Sandweiss and his associates do not agree entirely with the results published in the past. It would seem probable that the essential point in the maintenance

44. Saltzstein, H. C., and Kurtz, I. J.: The Effects of Pedicle Jejunal Transplants in the Stomach on Mann-Williamson Dogs, Surg., Gynec. & Obst., to be published.

of an ulcer is not so much that the titer of the acid be high as that secretion continue after buffering food is gone. One would expect many persons with ulcer not to have a typical hypersecretion, and one would expect to find many "normal" controls to have hypersecretion and a temperament ideal for the formation of a bad ulcer. Probably the only reason why they never get an ulcer is that they fail to get from their ancestors certain genes which are necessary. They are like those thousands of typical epileptic persons who have never had a fit. But with all these difficulties in the way of demonstrating differences between the average secretory curves of the controls and the patients with ulcer, Sandweiss and his associates have confirmed the fact that the person with ulcer tends to go on secreting after his stomach has emptied for the night. This is the important point. One way of combating this tendency and the resultant danger to the person is to have the victim set an alarm clock to wake him around midnight so that he can then take a glass of milk, perhaps with some antacid. If he has trouble going back to sleep he can take a sedative at bedtime. During the day when the man is awake he may feel pain as soon as the acid begins to dig into his ulcer and then he can save himself by taking food. During the night he may go on sleeping until much injury has been wrought. It is disappointing to hear that the operation of cutting both vagus nerves is not always giving the desired result. One would expect most of the nerves carrying pain from the stomach and duodenum to go out to the spinal cord by way of the splanchnic nerves.

DR. BURRILL B. CROHN, New York: The idea that duodenal ulcer patients show a continuous night secretion is more or less an established credo and dates back to early work by Einhorn among others. The interesting point about this paper is not so much the confirmation of the high acidity values and the hypersecretion which is seen in ulcer patients but is the fact that almost identical values were found in normal men and even in some normal women as controls. This point only emphasizes the fact that the ulcer is not attributable to 10 or 20 units of increased acidity or some such figure. Following subtotal gastrectomy, ulcer may recur when even a small amount of free acid is present. Many of the purely functional cases which we included in the old category of Reichmann's disease showed high acid curves and continuous hypersecretion for six hours after a test meal and yet ulcer did not develop. That unknown quantity the x-factor, which disposes to ulcer, is missing in the constitution of these patients. Previous criticisms of these secretory studies have been made on the ground that the complete aspiration of the stomach at midnight acted to discourage further secretory activity during the latter part of the night. Such criticism is not valid since identical conditions prevailed in the study both of the control and of the ulcer cases. The important conclusion from this paper is the necessity for the treatment of the patient during the night by some means, either frequent feedings or continuous drip of milk or of colloidal suspensions, to obtain a neutralization of the night secretion in the ulcer cases. The authors reflect some hesitation in accepting the operation of subtotal gastrectomy for ulcer as a promising procedure. As each year progresses, experience widens; the mortality of the operation has fallen almost to a disappearing point, and the percentage of recurrences remains materially low. In spite of the recurrences, which may range around 4 to 6 per cent, subtotal gastrectomy is the operation of choice and is followed by anacidity or by reduction of acid secretion in over two thirds of the cases. If the supraphrenic bilateral vagotomy can be shown to have a physiologic basis in reducing or eliminating acid gastric secretion in all of its three phases, this would be an ideal procedure in itself and might possibly obviate the necessity for a resection. But further studies on the alterations of gastric secretion following complete and successful vagotomy will be necessary in order to convince physiologists and clinicians of the favorable alterations in gastric chemism following such a procedure and its consequent beneficial effect on the healing of the lesion.

DR. A. C. IVY, Chicago: The observations presented in this paper represent a large amount of work as well as thought regarding the design of the various experiments. In work of this type it would appear to be important to keep several factors as constant as possible in the group of patients under study. One of these factors is the nature of the previous meal. The importance of this factor is indicated by the authors' results, which indicate that the acidity of the night secretion of the ulcer patients was greater when the evening meal contained beef broth and fish than when the same meal was given at noon. A second factor is the nature of the medication given with or between the meals. Alkalis frequently cause a "rebound secretion" whereas aluminum preparations do not. Dr. Sandweiss informs me that the only patient in his group that took considerable alkalis was the one (patient 2) who manifested a hypersecretion. A third factor is the state of activity of the ulcer. There is some evidence in the literature showing that the secretory response to an alcohol test meal is less when the ulcer becomes inactive. Dr. Sandweiss informs me that with the exception of the "hypersecretor" the patients they studied were relatively symptom free or the distress was mild and intermittent. A fourth factor is that all duodenal ulcer patients, as shown in the cases in this paper, in the paper of Dr. Dragstedt and in other papers on this subject, do not manifest a prolonged secretory response to stimuli or a high interdigestive secretion. Even under controlled laboratory conditions only approximately 75 per cent of dogs with postoperative jejunal ulcer manifest a definite prolongation of the secretory response to a test meal in regard to the free acidity of the gastric contents. However, such ulcer dogs, as was true in most of the ulcer patients mentioned in this paper, uniformly show an increase in the volume of gastric contents. Our studies on gastric secretion in the ulcer patient have not involved a study of the night secretion. My associates and I have studied the interdigestive secretion in approximately 100 duodenal ulcer patients fourteen hours after the last meal. We have studied the rate of secretion only when the ulcer is in the very active stage. We have found the acid output (volume × free acid concentration) over a period of one or two hours to be on the average approximately 100 per cent greater in duodenal ulcer patients, when the ulcer is active, than in asymptomatic subjects without a history of dyspepsia. However, we find, as others, that some asymptomatic subjects secrete as much interdigestive secretion as patients with an active duodenal ulcer. Thus the factor which I suspect caused the observations of these authors to be somewhat out of line with those of others is that the ulcer in their patients was relatively inactive. The factors of the "rebound secretion" after alkalis and the nature of the last meal has to be considered also, though it is probable that patients may vary considerably in this regard. We need more data than we now possess on the "night secretion" of patients when their ulcer is clinically active and inactive. Since it has, in my opinion, been established that free acidity is one of the chronicity factors in peptic ulcer, the authors are justified in calling attention to the significance of the "night secretion" especially in that group of patients who tend to be refractory to management.

DR. WALTER LINCOLN PALMER, Chicago: The authors are to be congratulated on an interesting study of nocturnal gastric secretion. The observations vary somewhat from those obtained by other workers, notably Winkelstein, Val Dez and Mears, in that Sandweiss and his associates have found a higher fasting or nocturnal secretion in normal persons and less evidence of hypersecretion in patients with duodenal ulcer. The discrepancy may be due in part to the fact that the present investigators were careful to pick healthy normal males as their control subjects. It is evident that more work needs to be done on normal postdigestive and fasting secretion. It is clear, however, that the term "hypersecretion" is valid only with respect to the volume of secretion, not concentration of acid. Ivy, Bloomfield and others have considered the higher fasting secretory rates as rather typical of duodenal ulcer. In general this has been my observation also. Furthermore, our unpublished observations and those of Dragstedt also indicate a higher nocturnal secretion in duodenal ulcer than those described in the present paper. The cases studied by Sandweiss and his associates were uncomplicated ones with mild distress, whereas my associates and I have studied particularly the complicated ones, perhaps with more distress. Patient 2, whom the authors class as a hypersecretor and suggest excluding from their series, seems more comparable to those studied by us. There is some evidence that an active painful ulcer reflexly increases both gastric secretion and motility and that the action of the normal irritant (hydro-

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chloric acid) thus tends toward the establishment of a vicious cycle. The implications of the nocturnal secretion in the treatment of peptic ulcer were recognized by Sippy and his associates and have been in the minds of students of the ulcer problem ever since. There is little doubt that the drip methods do give better continuous neutralization of the acid secretion than other procedures. In the case of duodenal ulcer, continuous aspiration of the stomach may accomplish the same result in terms of the p_H at the site of the ulcer. However, neither of these procedures is practicable for long periods, and the treatment of ulcer must be continued for a long time. The authors have rendered a signal service by emphasizing conservatism in the surgical treatment of peptic ulcer and by again calling attention to the importance of the night secretion.

DR. MARCUS H. SUGARMAN, Detroit: The following pertinent points need to be reemphasized: 1. Most of our ulcer patients had only mild distress at the time the study was conducted. It is possible that patients with very active ulcer symptoms might show a greater volume of nocturnal secretion and a higher acid concentration, as shown by Dragstedt, Palmer and others. 2. Our controls (in the continuous suction study) were perfectly normal healthy males, free from any complaints whatever. This, at least in part, explains the difference between our results and those of Mears. 3. When meat and fish as a source of protein are added to the noon meal instead of to the evening meal, the stomach contains less free acid during the night. In management of ulcer patients therefore it is advisable to add these foods during the noon meal instead of during the evening meal. 4. During the night, hydrochloric acid in the stomach, unless neutralized, may undo in part what neutralization accomplishes during the day. It is therefore suggested that, in the care of patients with acute ulcer distress, feedings be maintained during the night hours. 5. Our studies also indicate that patients with duodenal ulcer, when presenting only mild distress, do not "hypersecrete." While it is true that a greater volume of gastric juice may be aspirated at any time during the night as compared with normal individuals, the greater volume is very likely not due to hypersecretion.

DR. M. H. F. FRIEDMAN, Philadelphia: Viscerovisceral reflexes perhaps may be responsible for the greater secretion shown by the ulcer patient during a period when he has accentuated ulcer distress. As Dr. Palmer has suggested, the acid gastric juice may perhaps act as an irritant to initiate and maintain this reflex hypersecretion and thus establish a vicious cycle. Possibly during periods of distress there is a lowering of the threshold of sensitivity of the duodenum to acid. Drs. Pincus, Thomas, Rehfuss and I found in dogs that introduction of acid in the small intestine decreased or arrested completely the gastric secretion provoked by feeding meat or injection of insulin. This inhibitory effect, however, occurred only when the p_H of the intestinal contents was depressed to 2.5 or lower. Somewhat similar results were obtained in man by Shay and his co-workers. These workers also found that intestinal instillation of acid was less effective in suppressing gastric secretion in the ulcer patient than in normal healthy persons. It is also interesting to learn that Berk, Rehfuss and Thomas found that the duodenal contents after a test meal have a lower p_H in ulcer patients than in normal subjects. Histamine frequently has been suggested as playing a part in the hypersecretion of gastric juice by the patient with an active ulcer. In this connection the observations of Pincus, Friedman, Thomas and Rehfuss are perhaps significant. These investigators found that, whereas gastric secretion stimulated by food or insulin could be inhibited by lowering the intestinal p_H by intraduodenal instillation of acid, secretion stimulated by histamine was not affected at all.

DR. DAVID J. SANDWEISS, Detroit: Dr. Crohn refers to our hesitation in accepting the operation of subtotal gastrectomy for duodenal ulcer as a promising procedure. He states that the mortality of the operation has fallen almost to a disappearing point and that the percentage of recurrences ranges around 4 to 6. While the postoperative mortality is low for the leading institutions of the country, I have been unable to find accurate figures for the country as a whole. It is also important to bear in mind that, exclusive of the 4 to 6 per cent of recurrences (which I believe refer to ulcerations as evidenced by positive roentgen findings), 4 to 5 per cent have subsequent hemorrhages. In addition, there is a group of gastrectomized patients with moderate to severe postprandial symptoms. In the August 1945 issue of *Gastroenterology*, Berkman and Hack say "We have found that recurrent ulceration is not the only possible unfavorable postoperative reaction with which we may be confronted. There still are patients having gastrointestinal symptoms, and some of them are incapacitated to a degree far greater than some patients who have recurrent ulcers." Glaessner in 1940 and Jordan in 1941 discussed the postprandial symptoms. Mateer in 1941 estimated that postprandial symptoms occurred in approximately 14 per cent of his cases. Church and Hinton reported the results of partial gastrectomy in 104 cases. Some of the patients classified as benefited had weakness, loss of weight or anemia after the operation. Miller in 1942 stated that 17 patients of 240 who were improved following subtotal gastrectomy complained of vague symptoms such as weakness, pallor, nausea and loss of weight. Custer, Butt and Waugh made a statistical study of 500 consecutive cases and reported that typical postprandial symptoms which have been designated as the "dumping syndrome" developed in 28 (5.6 per cent) of the 500 cases. Follow-up data were obtained for five to eight years after operation in 24 of the 28 cases. In 21 the symptoms had continued. The symptoms were so severe that they interfered with the work of 10 patients. Six were unable to work and might be classified as gastric cripples. In addition, there is a group of patients who develop pernicious anemia or pernicious anemia-like blood pictures following this operation. When we take all of these facts into consideration (postoperative mortality, recurrent ulceration, subsequent hemorrhages, the "dumping syndrome," inanition and the anemias) one is justified in saying that subtotal gastric resection is not the answer to our ulcer problem, though I agree with Dr. Crohn that, when surgery becomes a necessity, subtotal gastrectomy is the operation of choice at present. With regard to newer surgical procedures, would it not be advisable to check these first experimentally?

PHYSOSTIGMINE FOR MUSCLE SPASM IN RHEUMATOID ARTHRITIS

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Following the work of Kabat and Knapp [1] reporting the use of neostigmine in the treatment of muscle spasm in poliomyelitis, our attention was drawn to the problem of muscle spasm in rheumatoid arthritis and allied conditions. The incidence of rheumatoid arthritis is so great and the various forms of therapy so numerous that it should be our purpose to reduce the treatment of this disease to the simplest denominator. Any form of therapy that tends to minimize deformities should be considered worthy of consideration. Our object in this writing is to (1) prevent deformities in rheumatoid arthritis, (2) lessen the severity of deformities already formed, (3) simplify the drug used, (4) lessen the cost to the patient and (5) relieve pain.

From the Arthritis Clinics of the Philadelphia General Hospital and Jefferson Medical Hospital and the special arthritis wards of the Philadelphia General Hospital.

So that there would be no discrepancies as to the uniformity of physostigmine and its administration simultaneously with atropine, hypodermic tablets containing both physostigmine and atropine were obtained. They were supplied by Endo Products, Inc., of New York.

William Levin, Ph.G., chief druggist at the Philadelphia General Hospital, assisted early in this experiment. He obtained and supplied us with physostigmine. Mrs. Marie Craig, physical therapist, Mr. Francis Naselli, physical therapist of the Division of Physical Medicine at the Philadelphia General Hospital, and Mrs. Phyllis Natkow, laboratory technician, helped in the preparation of clinical material for this problem. The nursing staff of the clinics and the wards have been extremely helpful in both institutions.

1. Kabat, Herman, and Knapp, M. D.: The Use of Prostigmine in the Treatment of Poliomyelitis, J. A. M. A. **122**: 989 (Aug. 7) 1943.

In April 1944 we published a preliminary report [2] on the use of neostigmine in the treatment of muscle spasm in rheumatoid arthritis. The present report, while supplementary, tends to bring to light new facts relative to the use of an old drug. Because of the expense involved in the use of large quantities of neostigmine for a problem of such proportions, it was found necessary to resort to less expensive drugs. Accordingly physostigmine was selected, since it is very closely related in action to neostigmine, both drugs belonging to the group of anticholinesterase drugs.

In our study we find that there were fewer untoward reactions with physostigmine than with neostigmine. The lesser frequency of complaints with physostigmine made for better patient cooperation. We were also impressed with the observation of fewer complaints of pain from local reactions after injection of physostigmine salicylate than after injection of neostigmine methylsulfate. It is because of this and for reasons aforementioned that we have substituted physostigmine for neostigmine in all our studies. As will be noted, physostigmine bears out our original premise in respect to clinical improvement. It relieves muscle spasm and therefore relieves pain in many instances. The relief is common to a large proportion of cases and is frequently encountered within fifteen to thirty minutes after injection. Further studies with neostigmine bromide administered by mouth do not warrant its continued use for this purpose.

There can be no question concerning the existence of muscle spasm and pain on pressure or stretching of the affected parts. One need only to manipulate a joint of the arthritis victim to confirm this. However, these facts have not been emphasized in the cases of arthritis of long standing.

In rheumatoid arthritis there remains a state of spasm of the muscles even though the joint process has become quite inactive. Palpation of the hamstring muscles in an acutely or subacutely inflamed knee joint will demonstrate this. Spasm can also be elicited about other joints. Both the flexor and the extensor muscles are usually involved; however, the deformity that will result is usually commensurate with the force exerted by the most powerful muscle against its antagonist. This of course depends on the extent of the involvement of the muscle or tendon; the more extensive the involvement, the greater the muscle spasm. Should the flexor be the more powerful muscle but the extensor be most involved, the greater pull will be in the direction of the extensor. However, if there is an equal amount of irritation to the two muscles, the deformity will doubtless be in the direction of the more powerful flexor. This spasm is manifested clinically in various types of painful deformities. If this hypothesis is true, relief of such muscle spasm should result in increased comfort to the patient and a consequent diminution or complete prevention of deformities.

In poliomyelitis the so-called muscle spasm has been treated with apparent success by the use of fomentations in accord with the Kenny technic.[3] In subacute and chronic poliomyelitis, neostigmine (prostigmine) has been used with encouraging results by Kabat and Knapp.[1] Our purpose has been to apply the principles set forth by the latter investigators to the muscle spasm accompanying rheumatoid arthritis, fibrositis, bursitis and related conditions.

Kabat and Knapp believe that neostigmine has a direct action on the spinal cord which may be depressing in nature in some instances and stimulating in others, depending on the group of nerves which are acted on. In cases of rheumatoid arthritis, we believe the action is probably depressive, as the muscle spasm is usually promptly alleviated.

Encouraging results with neostigmine in the relief of muscle spasm in rheumatoid arthritis and bursitis, as well as relief of neuromuscular dysfunction in chronic disability resulting from trauma and cerebral thrombosis, were reported by Kabat.[4] Further evidence that muscle spasm is relaxed by the use of neostigmine is reported by Brainerd and his associates [5] and by Fox and Spankus.[6] The role of neostigmine in the treatment of muscle spasm and the mechanism of its action have recently been reviewed.[7]

PROCEDURE

In the special arthritis wards of the Philadelphia General Hospital we have availed ourselves of the opportunity of studying the effects of physostigmine salicylate on muscle spasm in rheumatoid arthritis. One must take cognizance of the fact that bed rest alone will in many instances give a measure of relief from pain and even some relaxation of muscle spasm.

Since controls were necessary, the patient was first given a hypodermic injection of isotonic solution of sodium chloride daily for one week. Joints were measured before and after the period.[8] If a reasonable amount of improvement was not noted, the patient was then given daily injections of 0.6 mg. ($\frac{1}{100}$ grain) of atropine sulfate. Atropine eliminates the unpleasant parasympathetic side effects of physostigmine as well as of neostigmine, and it was our intention to use atropine in conjunction with physostigmine for the relief of muscle spasm. Joints were again measured before and after one week's treatment and the patient was interrogated as regards pain. In the event that treatment thus accorded produced relief from muscle spasm, the same treatment was continued until no more improvement was obtainable. When it was established that saline or atropine injections produced no relief, physostigmine therapy was instituted. The usual procedure was to give 0.6 mg. each of physostigmine and atropine sulfate simultaneously. If no relaxation of muscle was obtainable with this dose, physostigmine was increased to 1.2 mg. ($\frac{1}{50}$ grain).

In this way we felt that we could presume to conclude whether the improvement obtained was coincident with rest in bed, the use of atropine or the physostigmine-atropine combination.

The dose of atropine sulfate was increased or decreased depending on the reaction encountered. In the presence of an unusual amount of dryness of the throat and/or dilatation of the pupils, the dose of atropine was reduced to 0.4 mg. ($\frac{1}{150}$ grain) depending

2. Trommer, P. R., and Cohen, Abraham: The Use of Neostigmine in the Treatment of Muscle Spasm in Rheumatoid Arthritis and Associated Conditions (Preliminary Report), J. A. M. A. **124:** 1237 (April 29) 1944.

3. Pohl, J. F., and Kenny, Elizabeth: The Kenny Concept of Infantile Paralysis, St. Paul, Bruce Publishing Company, 1943.

4. Kabat, Herman: Studies on Neuromuscular Dysfunction, Pub. Health Rep. **59:** 1635 (Dec. 22) 1944.

5. Brainerd, Henry; Katz, H. J.; Rowe, A. P., Jr., and Geiger, J. C.: The Clinical Manifestations of Poliomyelitis, J. A. M. A. **128:** 718 (July 7) 1945.

6. Fox, M. J., and Spankus, W. H.: The Value of Neostigmine in Acute Anterior Poliomyelitis, J. A. M. A. **128:** 720 (July 7) 1945.

7. Kabat, Herman: Studies on Neuromuscular Dysfunction: VI. Neostigmine Therapy of Neuromuscular Dysfunction, M. Ann. District of Columbia **14:** 248 (June) 1945. Neostigmine and Neuromuscular Dysfunction, editorial, J. A. M. A. **128:** 812 (July 14) 1945.

8. All involved joints were measured in respect to movements, degree of pain, contractures and so on, at weekly intervals throughout the period of study.

on whether or not relaxation of muscle spasm could be elicited. However, if there was little or no relaxation of muscle spasm, atropine was maintained at the dose of 0.6 mg. while the dose of physostigmine salicylate was increased to 1.2 mg. On the other hand, if the patient complained of dizziness, salivation, pain in the abdomen or nausea, the dose of physostigmine was reduced or the atropine increased as the case may be.

Table 1 is a summary of the types and number of cases treated in the arthritis clinics and represents some of those treated in the special wards for arthritis.

Table 2 represents the cases treated only in the special arthritis wards. Opportunity was had in each instance to follow the procedure of controls as already described.

These following cases represent those hospitalized for the purpose of control:

CASE 1.—*Felty's syndrome. Duration ten months. History.*—M. B., a woman aged 21, whose chief complaint was "pain and swelling in joints," had been well until ten months before, when she noticed a recurrent pain in the joints of the right hand. This would persist for a few days and remit for a few. Soon she began to have pain in the wrists, elbows, knees and feet. More recently the shoulders and the temporomandibular joints became involved. After about five months the affected joints began to swell, and soon after there was considerable limitation of motion.

TABLE 1.—*Types and Number of Cases Treated in Arthritis Clinics*

	Number of Cases	
	Improvement	No Improvement
Rheumatoid arthritis	120	33
Fibrositis	13	5
Spondylitis	10	1
Calcified bursitis	10	1
Hypertrophic arthritis of the spine	1	2
Sciatica	2	2
Osteoarthritis of the hip	2	0
Total	149	44

The patient had been under a physician's care throughout the illness. Two and one-half months before entry she went to a hospital, where she was put to bed. She came to this hospital because of her inability to pay for care.

There was nothing of importance in the past medical history except that she had some pain in the joints at the age of 9. This was not accompanied by swelling, nor was it necessary for her to be confined to bed.

Physical Examination.—The patient, who was poorly developed, weighed 82½ pounds (37.4 Kg.). She was cooperative and noncomplaining, though in apparent discomfort. She lay in bed, where she had been for the past three months. The head, neck and chest were normal except that the apex of the heart was at the fifth intercostal space at the midclavicular line, with a soft systolic murmur. The abdomen showed a firm spleen, palpable 3 fingerbreadths below the costal margin. The liver was palpable 1 fingerbreadth below the costal margin.

The left axilla showed three discrete lymph nodes, each about the size of a large almond. Enlarged lymph glands were also palpable in both groins.

The hands showed fusiform swelling of all the fingers. The wrists were swollen moderately. There was limitation of motion of the elbows to about 85 per cent of normal.

There was complete range of motion of the shoulders. The right knee showed 90 per cent of normal extension. The left knee showed 70 per cent of normal flexion. Both knees were swollen and tender. There was no redness. The feet were tender and swollen.

The impression was of Felty's syndrome.

Initial studies revealed a hemoglobin of 11 Gm., red blood cells 3,880,000, white blood cells 5,650, polymorphonuclears 66 per cent, lymphocytes 26 per cent, mononuclears 6 per cent, basophils 2 per cent, hypochromia, blood protein 6.3 mg. per hundred cubic centimeters, albumin 4.2 mg. per hundred cubic centimeters, globulin 2.1 mg. and sedimentation rate 38 mm. (Westergren). Blood and urine studies were otherwise negative. Biopsy of a left axillary lymph node Aug. 28, 1944 revealed probable lymphatic hyperplasia.

TABLE 2.—*Cases Treated Only in Special Arthritis Wards*

Name	Type of Arthritis	I. S.	A. T.	P. A.
1. M. B.	Generalized (rheumatoid)	N. I.	N. I.	I.
2. C. S.	Generalized (rheumatoid)	N. I.	N. I.	I.
3. E. W.	Spine (rheumatoid)	N. I.	N. I.	N. I.
4. J. L.	Hips (rheumatoid)	N. I.	N. I.	I.
5. E. H.	Spine (rheumatoid)	N. I.	N. I.	I.
6. L. H.	Generalized (rheumatoid)	N. I.	N. I.	I.
7. A. J.	Generalized (rheumatoid)	N. I.	N. I.	I.
8. M. W.	Generalized (rheumatoid)	N. I.	N. I.	I.
9. I. P.	Knees (mixed)	N. I.	I.	
10. B. H.	Generalized (rheumatoid)	N. I.	N. I.	I.
11. S. D.	Generalized (rheumatoid)	N. I.	N. I.	I.
12. J. McG.	Generalized (rheumatoid)	N. I.	N. I.	N. I.
13. J. C.	Generalized (rheumatoid)	N. I.	N. I.	N. I.
14. M. K.	Generalized (rheumatoid)	N. I.	N. I.	N. I.

Key: I. S., isotonic solution of sodium chloride; A. T., atropine sulfate; P. A., physostigmine and atropine; N. I., no improvement; I., improvement.

Aside from stiffness and pain in various joints, the patient had a contracture of the right knee. There was distinct spasm of the hamstring muscles. She was placed on a hard surface, and flexion and extension were measured by estimating the distance from the medial surface of popliteal space to the hard surface. The hamstring muscles were spastic. For one week the patient received a daily sterile hypodermic without benefit. During the second week the patient received a hypodermic injection of 0.6 mg. of atropine sulfate daily without benefit.

Physostigmine salicylate 0.6 mg. with atropine sulfate 0.6 mg. was administered daily by hypodermic from then on. The result obtained is illustrated in table 3, using the measurements of the right knee only.

On September 25 it was decided to replace the physostigmine-atropine by a sterile hypodermic. The relaxation persisted for a few days and the muscle spasm returned. The flexion deformity now measured the same as on September 11. When physostigmine-atropine therapy was resumed, the muscle spasm promptly disappeared. Under this therapy the patient noted that there was decided improvement in stiffness and pain. However, since the improvement in the contractures seemed to be at a standstill, it was felt that additional therapy was necessary for the relief of the rheumatoid arthritis.

A transfusion of 500 cc. of whole blood was given. Because of the weight loss, insulin 5 units three times daily after eating

TABLE 3.—*Measurements of Right Knee in Case 1*

Date	Flexion, Inches	Extension, Inches
9/11/44	11	2¾
9/13/44	11½	2
9/15/44	12	1½
9/17/44	11½	1
9/19/44	12	¾
9/21/44	10⅝	½
9/23/44	11⅜	⅜
9/25/44	12	⅜
9/27/44	11	¼
9/29/44	11⅜	¼

was administered. Eight weeks later the patient weighed 100 pounds (45 Kg.). The blood count was hemoglobin 12.5 Gm., red blood cells 4,000,000, white blood cells 6,100. The patient was very much improved.

Gold therapy was now instituted. This consisted of 1.24 mg. of aurothioglucose 10 mg. given intramuscularly semiweekly for four doses, 25 mg. semiweekly four doses, 50 mg. semiweekly four doses and 100 mg. weekly nine doses. The course was completed Jan. 19, 1945. At that time the patient was free from discomfort. Aside from spindle shaped deformities of

the fingers, for all intents and purposes she had made a complete recovery. The spleen was no longer palpable; however, glands were still palpable in the axilla. At the present time she is getting a second course of gold. She is working at her former position and weighs 113 pounds (51 Kg.).

On May 15 there was no evidence of enlarged spleen, and the axillary and inguinal lymph nodes were no longer palpable. The condition of the patient is excellent. Her weight is 117 pounds (53 Kg.).

CASE 2.—*Spondylitis of fifteen years' duration. History.*—R. M., a man aged 44, seen March 16, 1945, complained of pain in the back extending from the neck to the lower part of the back and down the legs. He had had pain in the back off and on for fifteen years. At the onset, which was gradual, there were soreness and stiffness in the lower part of the back. This was growing progressively worse until a brace was resorted to. In about six months the patient made a "complete recovery." A few months later the same condition returned and he had grown slowly but steadily worse. He attended various clinics throughout the country, where he was given intensive physical therapy, orthopedic appliances and even a bone graft without relief.

Physical Examination.—This was essentially negative except for a spondylitis. The height was 5 feet 6 inches (168 cm.), while the patient stated that his normal height was 5 feet 9½ inches (175 cm.). He was round shouldered. Examination of the back showed extreme muscle spasm extending from the cervical to the lower dorsal region. The neck showed only about 30 per cent of normal range of motion laterally. Extension was nil, while the head was in the position of flexion. The patient stated that he got but little sleep because of pain. He had to use three large pillows in order to feel one against his head. Examination of the secretion from the prostate gland showed myriads of pus cells.

Laboratory studies revealed hemoglobin 98 per cent, red blood cells 4,920,000, white blood cells 7,000, sedimentation rate 35 mm. (Westergren), blood urea 9 mg., blood uric acid 2.8 mg., reaction of urine alkaline, albumin a trace, microscopically little amorphous phosphate, very occasionally a red blood cell per high power field and 30 to 40 white blood cells per high power field. X-rays of the spine showed arthritic changes of the cervical, thoracic and lumbar spines. There was considerable lordosis present. The lumbar vertebrae showed a bone graft on the left extending from the first to the fourth lumbar vertebrae.

Treatment.—The patient was seen daily for three days and a placebo was given hypodermically. Since he had allotted himself only ten days in the city, it was decided to forego the use of atropine alone and initiate treatment with physostigmine and atropine. Up to this period there had been no improvement. The patient was given 0.4 mg. of atropine sulfate and 0.6 mg. of physostigmine salicylate hypodermically. The following day he reported that all day long he had felt "freer" and had much less stiffness. His height now measured 5 feet 6½ inches (168 cm.). The same treatment was accorded the patient daily. At the end of another week he was able to sleep without medication other than the aforementioned and he was free from pain. His height now measured 5 feet 8 inches (172.7 cm.). Motion in the neck was increased to about 50 per cent of normal for side and side motion. Extension was much improved, and the patient now possessed the ability to flex the head somewhat. He was instructed as to the procedure and told to get an injection daily for one month.

At the end of one month the condition was the same. He was free from pain, slept well and was able to conduct his business as he had not been able to do in years. The height remained at 5 feet 8 inches.

Two and one-half months after the beginning of treatment the patient reported that he felt fine. He was free from pain. His height was the same. He received treatment as described every other day.

CASE 3.—*Sacroiliac arthritis with sciatica of twelve years' duration.* E. A., a white woman aged 66, seen July 26, 1944, complained of pain in the back of the left leg radiating down to the calf. The present illness dated back almost twelve years. The condition came on gradually and had been becoming worse until when she was seen the discomfort was intense. The patient had had a breast amputation three years before. She had diabetes controlled by insulin. Her blood pressure was 160/100 mm. She was arteriosclerotic with avitaminosis. Her pain was affected by the changes in the weather.

Examination of the left leg revealed a shortening of the head of the gastrocnemius muscle. There was considerable difficulty in flexion of the leg, and descending the stairs caused much discomfort.

She was given physostigmine salicylate 0.6 mg. with atropine sulfate 0.4 mg. by hypodermic injection. Fifteen minutes later she was able to raise the right knee without discomfort.

Subsequent treatment consisted of semiweekly to weekly injections for a period of about four months. The patient had much relief at night, was able to raise the right leg without pain and could cross her knees and descend stairs easier and without discomfort. There was no difficulty in sleeping.

For the next six months she received injections every two to three weeks or whenever muscle spasm recurred. At no time have her symptoms recurred to the pretreatment state.

Other than a slight facial flushing after the first injection, no drug reactions occurred.

CASE 4.—*Rheumatoid arthritis of three years' duration.*—S. D., a man aged 71, had involvement of the shoulders, elbow, hands, right rip and both sacroiliac joints. With the right hand he was able to reach the right eye with difficulty and pain. With the left hand he was able to reach the left ear with difficulty and pain. There was a contracture of the right elbow of 130 degrees and of the left elbow of 120 degrees. There was practically no motion of the right hip.

After one week of daily injections of isotonic solution of sodium chloride and one with atropine sulfate 0.6 mg. there was no improvement. Ten minutes after the hypodermic injection of 1.2 mg. of physostigmine salicylate and 0.6 mg. of atropine sulfate the patient was able to reach the top of his head with the right hand and about 2 inches above the top of his head with the left. He noticed "considerable loosening up" and insisted that this was the first time anything had been given him that didn't put him to sleep and yet gave so much relief from pain.

Treatment was suggested as described to be administered daily for two weeks and then two times weekly. To date, July 10, 1945, the patient has retained the improvement and contractures are gradually becoming less. He has been more comfortable and is able to get around with greater ease.

CASE 5.—*Osteoarthritis of hip of fifteen months' duration.* I. M., a white woman aged 53, seen July 28, 1944, complained of pain in the right knee. At the age of 9 she fell, twisting the right hip. Weights were used for treatment. She had been perfectly well until Jan. 1, 1944, when she began to have pain in the right hip following the use of a knee press. The pain was quite severe and radiated down the leg.

The patient, who weighed 193 pounds (87.5 Kg.) and was 5 feet 9 inches (175 cm.) tall, showed limitation of motion in the right hip. Manipulation produced severe pain. The muscles surrounding the hip joint were in evident spasm. Voluntary hip flexion was limited to 200 degrees (180 plus 20). X-ray examination at this time revealed that the hip was gone and no socket was present. The hip joint was obliterated: osteoarthritis (fig. 1).

The blood count revealed hemoglobin 72 per cent, red blood cells 3,680,000, white blood cells 9,250. The patient had been on a weight reducing diet.

Further treatment consisted of physostigmine salicylate 0.6 mg. and atropine sulfate 0.6 mg. hypodermically twice weekly for fourteen weeks and then weekly for nineteen weeks. Following this the patient had considerable relief from pain and the muscle spasm was diminished. Voluntary motion now reached 230 degrees (180 plus 50). Subsequent observations revealed subjectively "that something felt as if it had gone back into place in the hip joint."

Injections twice weekly were sufficient to keep the patient relieved of pain and permitted her to do her own housework without too much difficulty. In all, there was reduction in weight from 193 pounds (87.5 Kg.) to 164 pounds (74.4 Kg.),

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a weight loss of 29 pounds (13 Kg.) in ten months. At the present time treatments consist of physostigmine-atropine injections weekly and a weight reducing diet.

This case is most unusual in that the pain in the hip was so severe and the limitation of motion was so annoying that several competent orthopedists had advised fusion for relief of symptoms. The x-ray revealed complete obliteration of the joint space. Relief from pain, increased muscle power and range of motion were accomplished, we believe, by the relief of muscle spasm with physostigmine. Surgery was no longer considered. One can argue that relief in this case might have resulted from weight reduction. However this may be, easing of pain and increase in motion were so sudden that one could not help but feel that it was the result of the drug. Furthermore, pain and spasm would return when there was interruption in treatment.

CASE 6.—*Calcified bursitis of three months' duration.* G. F., a man aged 61, complained of pain in the left shoulder with painful limitation of motion. He had been treated previously with heat in various forms plus the use of histamine ointment. Physical examination was negative except for painful limitation of motion in the left upper extremity.

X-ray examination revealed a very large calcified bursa in the region of the head of the left humerus. The bone structure of this shoulder girdle was normal. There was no arthritis present. Subsequent x-rays (two months later) disclosed no significant changes in the amount of calcification present (fig. 2).

Therapy consisted of physostigmine salicylate and atropine sulfate 0.6 mg. hypodermically. Relief from pain was evident within one hour. In addition there was increased strength in the arm so that the patient could lift and hold objects. He was unable to do this before therapy was instituted. Further treatment consisted of injections daily for three days, then three times a week for four weeks. There was continued improvement, as shown by the objective measurements and strength tests (table 4).

Fig. 1.—Osteoarthritis of right hip in case 5.

This case serves to illustrate that calcification of the bursae may not always be entirely responsible for painful limitation of motion and disability.

CASE 7.—*Bursitis of one year's duration.* G. K., a white man aged 50, seen May 24, 1945, complained of a painful immobile right shoulder. He had had similar attacks in 1940, 1942, 1943 and 1944. The diagnosis of calcified bursitis was confirmed by x-ray. All attacks were relieved in a reasonable period (ten days to two weeks) by x-ray therapy. The condition for which he was seeking treatment came on three months before, with pain and fixation of the shoulder girdle. The patient could not place his right hand in his pocket. All movements caused severe pain. X-ray examination revealed no evidence of old or recent injury or pathologic process to the bones of the right shoulder joint. The calcification previously described in the soft tissues of the right shoulder on April 16, 1943 had entirely disappeared, so that at the present time the entire shoulder appeared normal from the x-ray point of view. A point of tenderness could not be localized. It was now felt that the fixation was probably due to muscle spasm rather than to recurrent bursitis.

Fig. 2.—Calcified bursitis in case 6.

TABLE 4.—*Measurements in Case 6*

Left Upper Extremity	Before Treatment	After
Forward flexion, straight arm	115°	160°
Abduction, straight arm	85°	110°
Backward flexion, straight arm	25°	45°
Left hand fingers touch	1. Occiput	Right ear
	2. Past midline of spine-sacrum	All way around to right hip
	3. Barely touches right shoulder	Top of shoulder touched

Treatment consisted of physostigmine salicylate 0.6 mg. with 0.6 mg. of atropine sulfate subcutaneously. The patient immediately began to improve. With each injection there was continued improvement. He received treatment twice weekly for two months. He also received short wave diathermy and active exercise during this period.

CASE 8.—*Scalenus anticus syndrome of seven months' duration.* R. S., a white woman aged 43, seen Oct. 16, 1943, complained of pain in the neck and right shoulder radiating to the right elbow and wrist, and of numbness in the fingers of the right hand. The onset of this illness dated back about seven months. It came on with severe pain in the region of the neck and right shoulder, radiating to the right elbow and wrist. This was accompanied by numbness in the fingers of the right hand. On four occasions attempts were made to relieve the discomfort by infiltrations of procaine hydrochloride into the scalenus anticus muscle. The diagnosis of scalenus anticus syndrome was made by a competent surgeon. Operation of section of the muscle was advised. It was thought that the symptoms were due to spasm of the scalenus anticus muscle and that if the spasm could be relieved the symptoms might subside, thus obviating surgery.

Neostigmine methylsulfate 1 cc. 1:2,000 with 0.6 mg. of atropine sulfate was given intramuscularly on two successive days. For the next eight days treatment was repeated every other day. This was followed by a two weeks interval without treatment. Similar injections were then administered monthly. Reactions consisted of dizziness, abdominal pain with a desire to defecate, quivering of the facial muscles and restlessness. Subsequent adjunctive therapy consisted in the use of baking with the carbon filament bulb and deep massage.

Following the first injection pain was partially relieved, range of motion and power were increased, and numbness disappeared. The patient has gradually made a complete recovery, no further therapy being required since March 1944.

It was not convenient to hospitalize all our cases in order that we might treat them as controls, and therefore in our statistical report we are reporting no controls. All cases herein described in detail were studied as controls, however, and a sufficient number used to form a feasible conclusion.

The cases classified as fibrositis consist of those in which pain in various joints was complained of, sometimes with contractures of the elbows but always a considerable amount of stiffness. There is a history of aches and pains over a period of years without much deformity and with a normal sedimentation rate usually.

All cases of rheumatoid arthritis were of more than six months' duration and all presented a rapid sedimentation rate.

SUMMARY AND CONCLUSIONS

1. Physostigmine salicylate has been used successfully in the relief of muscle spasm and associated conditions such as fibrositis and bursitis. It is an inexpensive form of therapy, replacing the more expensive neostigmine methylsulfate. Physostigmine appears to give local pain reactions less frequently than neostigmine.

2. Physostigmine, like neostigmine, causes relaxation of muscle spasm even though it has persisted for many years. As a result, active as well as passive motion in the affected joints is more easily carried out with less pain.

3. The effect of physostigmine given subcutaneously is rapid (within three to fifteen minutes after administration) and may persist for several days.

4. Further studies with neostigmine bromide orally do not warrant its continued use in the treatment of muscle spasm in rheumatoid arthritis and its allied conditions.

5. Physostigmine did not produce any severe toxic reactions.

6. The studies reported indicate that physostigmine is no more toxic than was neostigmine methylsulfate when used in comparable doses.

7. Physostigmine is used in the treatment of muscle spasm in rheumatoid arthritis and allied conditions for the purpose of relieving pain due to spasm and for preventing deformities.

TRAUMATIC RUPTURE OF THE SPLEEN IN CHILDHOOD

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Rupture of the spleen is probably the most common serious subparietal injury to the abdominal viscera in any age group. Its early recognition and treatment in childhood is of especial interest to those who deal with the problems of early life. Seven children with traumatic rupture of the spleen have been observed by the Surgical Service of the Children's Hospital during the period of 1937-1944 inclusive. It is our purpose in this report to record our experience with these patients and to discuss some aspects of this injury in children.

Anderson [1] in 1939 reported 10 cases of ruptured spleen in children observed in a fifteen year period and reviewed the literature on 80 previously recorded childhood cases. The ages ranged from 4 to 15 years in her series and the sex distribution showed a male predominance of 3 to 1.

All our patients were boys ranging in age from 4 to 13 years. This is in keeping with the greater activity of males and their larger exposure to trauma.

ETIOLOGIC ASPECTS

Trauma to the abdomen resulting in rupture of the spleen is usually of a violent nature. Although open or penetrating wounds may readily produce splenic damage, in civilian practice rupture of the spleen is commonly a subparietal injury, frequently without evidence of external trauma. In Anderson's series of cases the injury was sustained most frequently in an automobile accident. Falls, kicks, blows, sledding accidents and indeed any heavy force applied directly to the splenic region may produce the injury. Rarely, indirect violence as in a fall on the left hip or the right side of the abdomen has occasioned splenic rupture.[2] Three of our 7 patients were injured in falls and 3 in sledding accidents; 1 was struck by a falling object. All sustained closed injuries, and only 1 showed any superficial evidence of trauma.

The mechanism by which trauma to the abdomen or lower thorax results in rupture of the normal spleen is not clearly understood, since the spleen is well protected by the costal cage and has a mobile attachment. A sudden increase in intra-abdominal pressure occasioned by blast injuries has been known to cause splenic rupture.[3] In adults the injury frequently is associated with fractured ribs, variously reported by different authors as from 10 to 20 per cent.[4] This combination of injuries is rare in childhood. Mazel [5] has suggested that in children the flexibility of the lower costal cage allows transmission of a blow directly to the spleen, resulting in rupture without associated rib fracture. There were no fractured ribs in our group of splenic injuries.

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PATHOLOGY

Harkins and Zabinski [6] in 1943 classified rupture of the spleen under six headings which included spontaneous, traumatic and delayed rupture of the normal and diseased spleen.

While spontaneous rupture of the normal spleen is a questionable entity and warrants little consideration, spontaneous rupture of the diseased organ is apparently not uncommon. In childhood, however, the most important of the splenic injuries is traumatic rupture of the normal spleen.

The pathologic lesions encountered in subparietal rupture of the normal spleen have been arranged by Roettig, Nusbaum and Curtis [7] into five groups: (1) fragmentation of the spleen into two or more parts or complete detachment from the pedicle, (2) large laceration near the hilus, (3) a single large or many small tears of the periphery, (4) solitary small laceration of the periphery and (5) subcapsular hematoma.

In the 7 children with ruptured spleens observed at the Children's Hospital, the lesion could be classified as group 1 in 2 instances, group 2 in 4 and group 4 in 1 case. None of the spleens showed any pathologic changes other than those of trauma. It is interesting that 1 of the children had been successfully treated in the Infants' Hospital for erythroblastosis fetalis five years before his splenic injury. Although his spleen was enlarged in early infancy, it was not palpable after the age of 6 months. After the removal of this spleen for traumatic rupture the specimen was found to weigh 64 Gm. and microscopic study revealed no abnormalities other than those produced by trauma.

Delayed splenic rupture is encountered in about 14 per cent of all cases of ruptured spleen according to Harkins and Zabinski.[6] This syndrome is characterized by a "silent period" of at least twenty-four to forty-eight hours after the injury, followed by the sudden development of signs of acute blood loss. The pathologic lesion responsible for secondary hemorrhage usually is either a small peripheral laceration or a subcapsular hematoma. In the former, hemorrhage is delayed by a clot or by omental tamponade, while in the latter an expanding hematoma causes necrosis of the splenic capsule and subsequent bleeding.

Delayed rupture of the spleen was not encountered in our group of children, although 1 patient was not hospitalized until twenty-seven hours after his injury. During this period, however, there were symptoms of progressive blood loss.

CLINICAL ASPECTS

A child who has sustained an abdominal injury causing rupture of the spleen usually complains of abdominal pain, frequently in the left upper quadrant and occasionally referred to the left shoulder. The pain is shortly followed by evidences of acute blood loss. On examination there are pallor, anxious facies, varying degrees of shock, tenderness and spasm maximal in the left upper abdominal quadrant and with progressive and extensive bleeding, signs of abdominal fluid. Data from our 7 patients are summarized in table 1.

The abdominal pain of ruptured spleen in the Children's Hospital cases was of a diffuse, poorly localized nature more often than it was limited to the left upper abdominal quadrant. One child had paroxysmal pain resembling that of intussusception. The pain was referred to the left shoulder in 3 of these 7 children. This phenomenon, known as "Kehr's sign," results from diaphragmatic irritation and occurs in about 50 per cent of children with splenic injuries.[1]

The symptoms of acute blood loss were quite striking in every instance. All of the children complained of weakness and thirst, and 2 of them had fainted prior to admission to the hospital. Nausea and vomiting, probably related either to the shock of the initial trauma or to adynamic ileus associated with hemoperitoneum, occurred in 6 of the 7 patients.

Signs of acute blood loss were evident in every child on examination, although only 1 was in severe shock at entry with pallor, a pulse rate of 120 per minute, blood pressure 65/50, air hunger, sweating and cold extremities. All of the children were pale, and with a single exception the pulse rates were over 100. One child whose pulse rate was 140 had a blood pressure of 130/92, probably demonstrating the overcompensation of a labile vasoconstrictor system in the face of hemorrhage, as discussed by Harkins.[6]

TABLE 1.—*Data from Seven Patients with Traumatic Rupture of the Spleen Treated at the Children's Hospital, Boston, 1937-1944*

Patient	Age	Sex	Injury	Symptoms	Clinical Examination	Interval from Injury to Operation	Operation	Result
1	5 yr.	♂	Fall	Diffuse abdominal pain; weakness; thirst	Pallor; tenderness R. U. Q.; B. P. 105/40; pulse 120; R. B. C. 3.5 million	9 hours	Splenectomy	Recovered
2	7 yr.	♂	Blow	Paroxysmal abdominal pain; vomiting; weakness; thirst	Pallor; tenderness L. L. Q.; B. P. 90/60; pulse 120; R. B. C. 4.85 million	8 hours	Splenectomy	Recovered
3	8½ yr.	♂	Fall	L. U. Q. pain; vomiting; left shoulder pain; weakness; thirst	Pallor; sweating; tenderness and spasm L. U. Q.; B. P. 105/72; pulse 96; R. B. C. 4.5 million	17 hours	Splenectomy	Recovered
4	13½ yr.	♂	Sledding accident	Diffuse abdominal pain; vomiting; left shoulder pain	Shock; tenderness and spasm max. L. U. Q.; dulness in flanks; B. P. 85/50, 65/50; pulse 120; R. B. C. 3.29 million	4 hours	Splenectomy	Recovered
5	10½ yr.	♂	Sledding accident	Diffuse abdominal pain; left shoulder pain; thirst; syncope	Pallor; cold extremities; tenderness and spasm L. U. Q.; shifting dulness; B. P. 104/72; pulse 124; R. B. C. 2.4 million	12 hours	Splenectomy	Recovered
6	5½ yr.	♂	Fall	Diffuse abdominal pain; vomiting; weakness; thirst	Pallor; diffuse abdominal tenderness and spasm; fluid wave; B. P. 98/50; pulse 104; R. B. C. 3.20 million	11 hours	Splenectomy	Recovered
7	4 yr.	♂	Sledding accident	L. U. Q. pain; vomiting; weakness; thirst; syncope	Pallor; tenderness and spasm L. U. Q.; fluid wave; B. P. 130/92; pulse 140; R. B. C. 3.5-2.6 (2 hrs.) million	30 hours	Splenectomy	Recovered

6. Harkins, H. N., and Zabinski, E. J.: Traumatic Rupture of the Spleen, Am. J. Surg. **61**: 67-77, 1943.
7. Roettig, L. C.; Nusbaum, W. D., and Curtis, G. M.: Traumatic Rupture of the Spleen, Am. J. Surg. **59**: 292-319, 1943.

Abdominal tenderness and muscle spasm were present in the left upper quadrant in 5 of these children. In 1 these signs were maximal in the right upper quadrant, and another had generalized abdominal tenderness and spasm. Pressure of the examiner's hand over the left upper quadrant in 1 patient produced left shoulder pain in a rather striking manner.

Signs of abdominal fluid as evidence of hemoperitoneum were elicited in 4 patients. In no instance was "Ballance's sign" encountered. This is described as increasing and nonshifting dulness in the left flank associated with signs of free fluid in the remainder of the abdomen. There were no palpable masses in the splenic region or elsewhere in any of our patients.

The erythrocyte count had fallen to 3,500,000 or less by the time of admission in 5 of these 7 patients, in 2 instances dropping as low as 2,600,000 and 2,400,000 before operation. Theoretically, blood loss from ruptured spleen causes an earlier and more profound reduction in blood volume than bleeding of equal degree from another source, since with splenic rupture the reservoir or "emergency" function of the spleen is not available as a compensatory mechanism in hemorrhage. Contrary to this hypothesis, 1 child had a red blood count of 4,500,000 on entry, falling to 4,070,000 within a two hour period. At operation he proved to have a small

TABLE 2.—*Surgical Mortality in Subcutaneous Rupture of the Spleen*

(From Harkins and Zabinski, with additions)

Author	Year	No. of Cases	Mortality, per Cent
Bessel-Hagen	1900	37	46
Michelsson	1913	298	33
Buxton	1922	...	29
McIndoe	1932	37	27
Anderson	1939	9	33
Foster	1940	20	30
Rousselot and Illyne	1941	17	29
Harkins and Zabinski	1943	10	30
Roettig, Nusbaum and Curtis	1943	15	7
Scott and Bowman	1945	7	0

laceration of the splenic periphery of the group 4 variety. Another patient's admission erythrocyte count recorded five hours after injury was 4,850,000 despite a freely bleeding laceration near the splenic hilus.

The leukocyte counts varied between 10,600 and 18,000 in this group of children on entry. Leukocytosis apparently is a physiologic response to trauma and hemorrhage and is not indicative of infection in such cases.

Roentgen examination of the lower thorax and abdomen was made in 6 of the 7 patients immediately after hospitalization. There were no evidences of fractured ribs or of ruptured hollow viscera. In our experience roentgenograms of the abdomen have not contributed to the positive diagnosis of splenic rupture. However, Solis-Cohen and Levine [8] as well as O'Neill and Rousseau [9] have described roentgen changes which they consider practically pathognomonic of rupture of the spleen. These changes include a dilated stomach with a serrated greater curvature and obliteration of the splenic shadow. Whether or not roentgenography is of aid in the diagnosis of ruptured spleen, roentgenograms of the thorax and abdomen are indicated in order to exclude associated injuries. The differential diagnosis includes contusion of the abdominal wall, fractured ribs, ruptured hollow viscus, ruptured kidney and lacerated liver. Any of these injuries may occur in conjunction with a ruptured spleen.

In general, a history of trauma to the abdomen, followed by symptoms and signs of blood loss with abdominal tenderness and spasm maximal in the left upper quadrant and a reduced or falling red blood count, are diagnostic of intra-abdominal hemorrhage and strongly suggestive of rupture of the spleen.

TREATMENT

As soon as a presumptive diagnosis of rupture of the spleen has been made, preparation for immediate splenectomy is indicated. Prolonged observation may allow the patient to become exsanguinated. A plasma infusion should be started while compatible blood is being obtained. The importance of having large amounts of whole blood available for continuous transfusion before, during and after operation cannot be overemphasized. In our experience the amount of blood present in the peritoneal cavity at the time of operation has averaged between 500 and 1,000 cc. Sudden release of tamponade on opening the peritoneum may result in acceleration of the bleeding, further hampering the operative procedure and adding considerably to the total blood loss.

The technic of splenectomy for ruptured spleen in children differs from the elective operation only in that immediate control of the pedicle is the first objective. While a transverse or subcostal approach gives the best exposure of the splenic region, we usually have employed a long, left paramedian incision when traumatic rupture is suspected. Rapid laparotomy is facilitated by this incision, and thorough abdominal exploration can be carried out without extending the wound. After the removal of the spleen all blood is aspirated from the peritoneal cavity, and the abdominal contents are carefully examined for associated injuries. Drainage is not indicated.

During the postoperative period an elevation in blood platelets occurs with the accompanying danger of vascular thrombosis. Platelet counts should be performed daily after the third or fourth postoperative day in anticipation of a "platelet crisis." The maximum elevation in thrombocytes is attained usually at the end of the first or during the second week after splenectomy.[10] It is the policy of this service to begin heparinization for any evidence of thrombosis and prophylactically for an elevation in platelets above 800,000 per cubic millimeter. Heparin is continued until symptoms have abated or until the platelet count has fallen below 800,000. Only 1 of our 7 patients developed symptoms suggestive of vascular thrombosis. These consisted of abdominal discomfort and vomiting associated with a platelet count of 900,000, occurring on the eighth postoperative day. Heparinization resulted in prompt relief of symptoms, but, because of persistent thrombocytosis, roentgen therapy to the thorax was given. Thereafter the platelet count subsided and the patient recovered uneventfully.

Davis and Sharpe [11] in 1938 discussed splenic vein thrombosis following splenectomy and concluded that this uncommon complication was most apt to result from the disease process necessitating splenectomy rather than from the operation itself. Recently, however, Gius, McGovern and McMurray [12] reported a case of

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11. Davis, H. H., and Sharpe, J. C.: Splenic Vein Thrombosis Following Splenectomy, Surg., Gynec. & Obst. **67:** 678-682, 1938.

12. Gius, J. A.; McGovern, J. D., and McMurray, W. R.: Portal Vein Thrombosis Following Removal of Ruptured Spleen, Ann. Surg. **121:** 100-110, 1945.

splenic and portal vein thrombosis which apparently followed splenectomy for traumatic rupture. This complication was not encountered in any of our patients.

One interesting sequela to splenectomy for traumatic rupture of the spleen is the condition known as "splenosis" or autoplastic transplantation of splenic tissue to the peritoneal surfaces. This condition is said to occur more commonly in young persons.[13] We have had no opportunity to observe this phenomenon in our patients.

COMMENT

The 7 patients with traumatic rupture of the spleen observed at the Children's Hospital from 1937 to 1944 were treated by splenectomy and all recovered. The general mortality resulting from this injury in all age groups as indicated by the literature has averaged about 30 per cent. In recent years the mortality rate has declined (table 2). This may be attributed to earlier recognition with prompt surgical intervention and to the greater availability of blood and blood substitutes and their use in replacing the blood loss.

Six of our 7 patients were operated on within three hours after entry, while 1 was observed for sixteen hours before splenectomy was performed.

To postpone operation after a presumptive diagnosis of splenic injury has been made is often disastrous. Because of the great danger of delayed splenic rupture, even a seemingly trivial laceration of the spleen should be treated by splenectomy rather than by attempted suture of the defect.

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COLLOIDAL SALT NASAL TAMPONADES: THEIR USE AND ABUSE

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There is probably no other type of nasal therapeusis so empirical and yet so widely used as that of nasal tamponades saturated with a solution of mild protein silver. Both rhinologists and general practitioners have employed it for years in a wide range of nasal disorders. Some of their advocates have made bizarre claims that these nasal packs, introduced under certain specifications, will relieve or even cure any and all nasal disturbances from nasal "catarrh" to empyema of the antrum; they even go so far as to believe that such therapy will cure asthma and even some ocular afflictions. Yet the merits of these tamponades have never been scientifically proved; indeed, the fact remains that many observers have accumulated considerable evidence to the contrary.

All along there has been a great lack of unanimity of opinion among authorities on this confused question, some notable workers standing stanchly by the use of the treatment, while others, equally reliable in their field, have considered it ineffective and even harmful.

Dowling [1] in 1910 advocated the beneficial use of nasal tamponades and subsequently published many papers in support of his observations. Since then many authors have substantiated his claims. Thus the treatment gained considerable acceptance.

Voorhees [2] in 1934 endeavored to estimate the popularity of the method and sent out a questionnaire to 7,300 eye, ear, nose and throat specialists to ascertain how many of them used silver colloidal preparations in their practice. He received 2,948 responses, of which 88 per cent declared that they used silver salts in one form or another. The replies were not sufficiently detailed to make it possible to judge whether these salts were used in the form of drops or of nasal tampons, but it seems fairly clear that many of the specialists used it in the form of tamponades.

Although it is common knowledge that general practitioners and rhinologists frequently employ this form of treatment in cases of acute and chronic sinusitis, a careful search of the literature on this subject during the past twenty-five years shows that no comprehensive or critical review of the subject of nasal tampons with colloidal salts has been made.

The standard textbooks either ignore the subject or commit themselves merely to some such statement as "nasal tampons [3] . . . colloidal silver . . . are undoubtedly of value in some cases but are not the panacea they were formerly believed to be." "Tamponade [4] with a mildly stimulating solution is used by many men." "The common [5] 'silver pack' method, of doubtful value, is usually so distasteful to children as to render it unsuitable in this age group."

This does not mean, however, that the method is without its strong supporters. Such a well known authority as Dean [6] claims that . . . so far, argyrol has given the best results in this class of cases, both clinically and also in experimental sinusitis in animals. Another supporter of the method is Boies,[7] who thinks that application of tampons soaked with 15 per cent mild protein silver in equal parts of glycerin and water, applied to the middle meatus or above the middle turbinate, or both, seems to be effective in the subacute cases of sinusitis.

Among the supporters also are found Williams and Mousel,[8] who in discussing the treatment of allergic patients claim that two to four tablets of histaminase taken before each meal will often cause a remarkable disappearance of polyps with reduction of edema and that such simple measures as shrinkage with the "Dowling pack" followed by gentle suction will effect a cure of secondary infection of the sinuses.

Gable,[9] also on the side of the pros, finds that a treatment most satisfactory both to the patient and to the physician is the placing of tampons saturated with a colloidal silver solution in the region of the ethmoid cells, a procedure which by osmosis removes the excess fluid from the mucous membrane, thus effecting a definite shrinkage.

13. Buchbinder, J. H., and Lipkoff, C. G.: "Splenosis": Multiple Peritoneal Implants Following Abdominal Injuries, Surgery **6**: 927-934, 1939.

1. Dowling, J. I.: Nasal Tamponades: An Original Method of Treating Ocular Disease, Homeop. Eye, Ear & Throat J. **16**: 259-268 (June) 1910; Nasal Tampon Treatment of Sinus Disease, Laryngoscope **35**: 453-468 (June) 1925; The Tampon Treatment of Ethmoiditis, J. Ophth., Otol. & Laryng. **31**: 53-60 (Feb.) 1927; Nonsurgical Treatment of Ethmoiditis, Laryngoscope **40**: 633-639 (Sept.) 1930; The Dowling Treatment—Thirty Years of Observation and Results, Eye, Ear, Nose & Throat Monthly **16**: 337-344 (Nov.) 1937.

2. Voorhees, I. W.: Evolution of the Silver Salts in Eye, Ear, Nose and Throat Work, Eye, Ear, Nose & Throat Monthly **13**: 269-273 (Aug.) 1934.

3. Lederer, F. L.: Diseases of the Ear, Nose and Throat, Philadelphia, F. A. Davis Company, 1938, p. 383.

4. Imperatori, J. C., and Burman, J. H.: Diseases of the Nose and Throat, ed. 2, Philadelphia, J. B. Lippincott 1939, p. 44.

5. Richards, L. G.: Otolaryngology in General Practice, New York, Macmillan Company, 1939, p. 232.

6. Dean, L. W., in Brennemann, J.: Practice of Pediatrics, Hagerstown, Md., W. I. Prior Company, Inc., 1937, vol. 2, chapter 41, p. 2.

7. Boies, L. R., in discussion on Kully, B. M.: The Use and Abuse of Nasal Vasoconstrictor Medications, J. A. M. A. **127**: 307-310 (Feb. 10) 1945.

8. Williams, H. L., and Mousel, L. H.: Diagnosis and Treatment of Chronic Disease of the Paranasal Sinuses, Ann. Otol., Rhin. & Laryng. **49**: 466-489 (June) 1940.

9. Gable, N. W.: Ethmoiditis, J. Florida M. A. **26**: 498-500 (May) 1940.

Equally positive are those of the opposing camp. Nadler [10] finds no physiologic basis for the use of local applications, irrigations or tampons or for the use of antiseptics such as organic silver preparations, since these cannot be brought in contact with all of the organisms in the nose. He feels that the nasal mucosa must be responsible for its own defense. Bowers [11] feels that the results obtained from the silver "pack" are due to osmosis by drawing water out of the tissues and that hypertonic saline solutions can do this equally well. Furstenberg [12] has eliminated the "pack method" from his clinic, as he feels that irritating solutions are contraindicated because gauze or cotton tampons can do injury to the delicate membranes. Swain [13] agrees that injury may be done by knocking off ciliated epithelium with the cotton applicators; also that colloidal silver preparations excoriate the mucous membranes. Mithoefer [14] has no faith in this method, and Walsh and Cannon [15] and Proetz [16] find its antiseptic value very doubtful.

With such leading authorities lined up in one camp or another, the confusion to the average practitioner who wishes to discriminate becomes very apparent. An attempt will be made to clarify the issue.

HISTORY OF COLLOIDAL SILVER

The therapeutic effect of certain of the metallic elements, especially of mercury and silver, has been known since ancient times. Thus Izar [17] reports that as long ago as the Macedonian era wounds were covered with silver plates. In parts of Italy erysipelas was still treated this way in the early part of this century.

Cary Lea in 1891 obtained dispersions of silver in water, but these aqueous solutions were unstable as they had no protective colloid added.

Credé meanwhile became interested in the therapeutic potentialities of silver and experimented with the effects of silver nitrate as compared with silver lactate, citrate and other forms. He introduced colloidal silver in 1896, and this instituted the use of colloidal metals as therapeutic agents; at the present time silver is probably one of the most important of the metals employed for this purpose.

Credé made use of Cary Lea's dextrin solution. At the present time pharmaceutical houses have put a large number of commercial products on the market which carry names indicative of the method of preparation or of the protecting colloid which is added to ensure their stability. Some of the solutions most frequently encountered, together with the protective colloid each contains, are "Argentum Credé" or Collargol (dextrin), Argyrol (vitellin from egg yolk), Dispargin (acid degradation product of gluten), Lysargin (sodium lysalbinate), Protargol (sodium protalibinate), Sophol (nucleic acids and formaldehyde) and Electrargol, an electrically dispersed solution, protected by gelatin.

PHARMACOLOGY

The effectiveness of colloidal silver is due to the immediate irritant properties produced by the free silver ions and subsequent mild antiseptic effects produced by the resolution and ionization of the silver protein compounds that were formed in the first stage.

Careful laboratory tests [18] prove that mild protein silver salts U. S. P. cannot be relied on to destroy Staphylococcus aureus in the presence of the concentration of organic matter used in the experiments. However, they rated somewhat better against Eberthella typhosa. The strong protein silver U. S. P. was effective against both organisms but rated slightly lower than noncolloidal compounds.

According to Goodman and Gilman [19] the antiseptic activity of a given preparation is not in proportion to the total content of silver but is due rather to the function of free silver ions. They further state that the indiscriminate use of colloidal silver solutions, especially in prophylactic treatment of upper respiratory infections, is probably doing more harm than good . . .; it is quite possible that they may injure tissue cells. Nor do Goodman and Gilman find any evidence that the routine use of silver solutions for prophylaxis of colds is at all efficacious.

The strong protein silver group, according to New and Nonofficial Remedies, is most effective but is slightly irritant and stimulant. The mild protein silver group acts largely as a mucilaginous demulcent, and its action is protective and detergent through the dislodging of pus.

EXPERIMENTAL STUDIES

Since it is a well known fact that nasal packs with colloidal silver bring about an increased flow of mucoid discharge, laboratory research on the influence of mucin in relation to the virulence of pathogenic germs is of great interest. The investigations of Nungester and his co-workers [20] produced unassailable proof that when bacteria are suspended in sterilized mucin and injected intraperitoneally, subcutaneously or into the lower air passages they become so injurious to the animal host that it frequently dies from a small sublethal dose; in other words, "the virulence of bacteria in the presence of mucin is greatly increased." The authors offer the following comments: "The mechanism of the action is not yet understood. Mucin does not interfere with phagocytosis but does inhibit the bactericidical properties of phagocytic cells. It enables bacteria to survive in the body of the host for longer periods without diminution in number, or it may allow the organisms to increase in number and so result in the death of the animal. The viscosity and cohesive properties of the mucin appear to be important indices to the effectiveness of mucin on bacterial infections."

Does it not seem logical to infer, therefore, that any agent which increases the flow of mucin of the nose is harmful rather than beneficial?

UNFAVORABLE EFFECTS

Bryant [21] emphasizes the danger of argyria resulting from the use of silver preparations for intranasal medication. He states that a review of the literature shows

10. Nadler, W. H.: Treatment of the Common Cold, M. Clin. North America **25**: 195-204 (Jan.) 1941.
11. Bowers, W. C.: Present Day Treatment of Infections of Middle Ear and Nasal Sinuses, Eye, Ear, Nose & Throat Monthly **22**: 293-300 (Aug.) 1943.
12. Furstenberg, A. C.: The Treatment of Acute Nasal Accessory Sinus Disease, Tr. Am. Laryng. A. **60**: 240-254, 1938.
13. Swain, H. L., in discussion on Furstenberg,[12] p. 251.
14. Mithoefer, W.: Treatment Other Than Operative of Nasal Accessory Sinuses, Ann. Otol., Rhin. & Laryng. **45**: 420-429 (June) 1936.
15. Walsh, T. E., and Cannon, P. R.: Effects of Drugs on Ciliary Activity of Mucosa of the Upper Respiratory Tract, Arch. Otolaryng. **19**: 55-65 (Jan.) 1934.
16. Proetz, A. W.: Effects of Certain Drugs on Living Ciliated Epithelium, Ann. Otol., Rhin & Laryng. **43**: 450-453 (June) 1934.
17. Cited by Weiser, H. B.: Inorganic Colloid Chemistry, New York, John Wiley & Sons, Inc., 1933, pp. 132-135.
18. Sollmann, Torald: Manual of Pharmacology, ed. 6, Philadelphia, W. B. Saunders Company, 1942.
19. Goodman, L. S., and Gilman, A.: Pharmaceutical Basis of Therapeutics, New York, Macmillan Company, 1941, pp. 860-861.
20. Nungester, W. J.; Jourdonais, L. F., and Wolf, A. A.: The Effect of Mucin on Infection by Bacteria, J. Infect. Dis. **59**: 11-21 (July-Aug.) 1936. Wheeler, A. H., and Nungester, W. J.: Effect of Mucin on Influenza Virus Infection in Hamsters, Science **96**: 92-93 (July 24) 1942.
21. Bryant, B. L.: Argyria Resulting from Intranasal Medication, Arch. Otolaryng. **31**: 127-139 (Jan.) 1940.

a decided increase in such cases in the last five years. He concludes that intranasal medication with silver preparations for even weeks is dangerous and "accomplishes nothing that cannot be accomplished safely and more efficiently by other means."

Criep [22] reported a case of allergy to argyrol (mild protein silver). There was evidence of sinus infection (with sneezing, nasal blockage, rhinorrhea and wheezing) developing during local application of the drug. After the throat had been sprayed with argyrol for treatment of pharyngitis, severe asthma developed. Scratch skin tests with 1 per cent argyrol were positive in the patient; passive transfer tests were carried out and specific antibodies against argyrol found. Intradermal tests with similar dilutions of U. S. P. mild protein silver (Solargentum and other brands) gave negative cutaneous reactions and negative passive transfer tests; local nasal tampons with these preparations caused no local symptoms of asthma. He questions whether allergic responses to argyrol are as rare as they are believed to be and suggests that symptoms may be so mild as to pass unrecognized by rhinologists.

PHYSIOLOGY OF THE NOSE

For a more intelligent approach to nasal therapy it is essential to consider that many nasal disturbances are physiologic in nature rather than pathologic, or a combination of the two.

Respiration, the most important nasal function, is intended to warm and humidify the inspired air on its way to the lungs. The structure of the nose also filters the air of dust particles and bacteria, the coarser particles being caught by the vibrissae of the nares, while finer particles are seized by the cilia and the mucous blanket. The mucous membrane of the nasal cavity and sinuses is lined with ciliated epithelium. The cilia are vigorous, resistant and powerful and possess a great regenerative faculty. The motion of the cilia is somewhat similar to grass or wheat being waved by the wind as it sweeps along the thin coat of the overlying mucus.

The film of mucous secretion extends over the nose, sinuses, trachea and esophagus into the stomach. The flow varies in rate and direction, that in the nose being directed toward the nasopharynx. Mucus is thin, elastic, slippery and tenacious, and it readily encloses and carries away foreign matter. Mucus movement is most active in the ciliated area in the posterior two thirds of the nose, where it is renewed about once every ten minutes. Bacteria are swept quickly away from the active areas, and the deeper portions of the nose are often found to be sterile. The natural defenses of the nose, therefore, are due to ciliary action and are not necessarily aided by nasal antiseptics. Probably there are also natural antibodies against bacterial agents.

INDICATIONS FOR AND AGAINST TAMPONAGE

From a scientific point of view, and according to the clinical evidence of some competent observers, one would infer that colloidal silver should have no place at all in nasal therapeusis. Yet it cannot be denied that nasal "packs," when used routinely, do give the patient temporary relief lasting from twenty-four to forty-eight hours. It is impossible to determine whether this relief is due to the osmotic, mildly astringent and antiseptic value of the drug. Some contend that the same results would be obtained with saline solution. It may also be that the suction of the superfluous nasal discharge which usually follows the tamponage effects a temporary palliation.

Aware of the contradictory opinions expressed in the literature as to the value of this medication, I have given this therapy a thorough and unbiased trial both in hospital and in private practice over a period of years, so as to form an opinion regarding this controversial topic. Careful notations have been made on the symptomatic relief following this treatment in a wide variety of types of nasal disorders.

I have concluded that colloidal silver tamponage is at best of dubious curative value in definitely purulent sinusitis or where there is physical obstruction in the structure of the nasal vestibule such as a considerably deflected septum, hypertrophied turbinates or polypi. In allergic patients this treatment often aggravates the symptoms.

On the other hand there is a class of patients, constituting a small percentage of those with nasal disorders, who complain of vague headaches, nasal stuffiness and discharge. This picture frequently occurs in stocky individuals of both sexes. Inquiry reveals that they have a tendency to overeating and indiscreet indulgence in rich foods, and that their bowels are sluggish. In addition, there may be evidence of overactivity of the sebaceous glands in the face and scalp. X-ray examination of the paranasal sinuses is usually negative except for a mild thickening of the mucous membranes lining them, especially those of the ethmoids. Except for the absence of sneezing, the clinical picture revealed by nasal examination is very similar to that seen in allergic patients: the nasal mucous membrane is congested and thickened, the inferior turbinates are boggy and the nares are filled with thick mucus.

Before submitting these patients to allergic tests or search for eosinophils, I have found it practicable to insert gently tampons medicated with 10 per cent colloidal silver solution. If this is followed by a very profuse mucoid discharge from the nose, saturating one or two towels, and if a yellow ropelike mucous discharge is sucked out of the nose, it is likely that the patients will experience long lasting relief after several such treatments. They usually volunteer the information that their heads feel clearer after such therapy. The most reasonable explanation of the favorable results obtained is that the symptoms are due to hyperactivity of the glands of the schneiderian membrane of the nose. In addition to receiving local treatment, these patients are advised to seek the aid of an internist for correction of their diets and mode of living. Small doses of thyroid are a good adjuvant.

It is immaterial whether similar results can be obtained with medication other than the silver protein solution, since this drug is relatively harmless if judiciously used and not applied over too long periods of time. In all other types of nasal disorders tamponades, although innocuous, are entirely ineffective, except for a very brief respite of the patients' complaints.

COMMENT

Solutions of mild protein silver used in the form either of nasal drops or of tampons have enjoyed considerable popularity both with the profession and with the public.

Up to the present time we have no definite scientific proof or statistical data to support the curative claims or

22. Criep, L. H.: Allergy to Argyrol, J. A. M. A. **121**: 421-422 (Feb. 6) 1943.

the great enthusiasm expressed by the proponents of this medicated tamponage. Though there is reasonably good evidence against the indiscriminate employment of tamponage, in some well selected instances this treatment produces very satisfactory results.

CONCLUSION

1. When used as a tampon in the nasal cavity, colloidal silver solution is limited in its local therapeutic effects.
2. There is no reason to believe that any particular technic employed in applying these tampons will produce superior results.
3. The best that can be claimed for it is that its action is due primarily to its free silver ions.
4. When the nose is packed tightly with tampons, some ciliary damage occurs.
5. There is no adequate excuse for having patients tamponaded over a period of months or years.
6. The mischief in the continued nasal packing lies not so much in the act of commission but rather in that of omission. In other words, the patient is receiving palliative care rather than a correct diagnosis, in a stage when chronicity could be avoided.
7. There is a particular type of so-called nasal "catarrh" in plethoric and obese persons which yields to such tamponage, the relief lasting at times for months without requiring interval treatment.
8. Allergy to protein silver, although rare, and possible argyria after prolonged use must be borne in mind.
9. Prolonged nasal tamponage as a routine method for the cure of chronic sinusitis has no physiologic or pharmacologic basis in the therapeutic armamentarium of either the rhinologist or the general practitioner.

1075 Park Avenue.

Clinical Notes, Suggestions and New Instruments

FRACTURE OF THE FIRST CERVICAL VERTEBRA, COMPLICATED BY CERVICAL RIB

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Fractures of the cervical vertebrae are not very unusual. Fractures of the first cervical vertebra are fairly rare. For this reason it would seem desirable to report a fracture of the atlas whenever encountered.

The present case illustrates a few unusual features. Plaut,[1] in a review of this injury in 1937, stated that the commonest cause for this type of fracture is a blow on the vertex of a patient looking forward, in an upright position. Under these circumstances the fracture is produced by a pressure on the vertex and counterpressure from the spine below; that is, pressure between the condyles of the occiput and the lateral masses of the axis. The weakest point of the atlas lies in the arches, both posterior and anterior, and fractures occur through these areas, with lateral displacement of the fragments. The patient who is the subject of the present report was standing in the hold of a vessel, looking forward, and was struck on the vertex with a sack of grain. It should be noted that the falling object was rather soft and consequently produced a pressure injury on the cervical vertebra rather than a direct fracture at the point of contact at the vertex. Hard objects striking the vertex are more likely to produce a depressed fracture of the skull at the vertex, or a basilar fracture. If the head is not fixed in a vertical position but is inclined somewhat forward, compression fractures of the cervical vertebrae, particularly the fifth and sixth, may be expected, instead of a fracture of the atlas. Fractures of the atlas are not uncommonly

Fig. 1.—Lateral view, showing fracture.

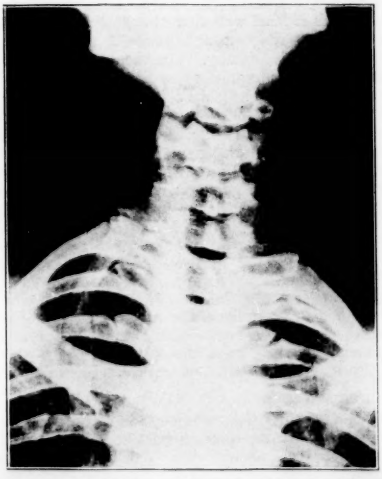

Fig. 2.—Anteroposterior view, demonstrating the cervical rib.

encountered in automobile accidents.[2] The mechanism here apparently is that the patient is thrown upward, usually from the rear seat, striking the vertex against the roof of the automobile. Here again a slower type of pressure is experienced

Dr. George McChesney cooperated with orthopedic consultation.
From the surgical services of Dr. Alanson Weeks and Dr. G. D. Delprat.

1. Plaut, H. F.: Fracture of the Atlas a Developmental Anomaly, Radiology **29**: 227-231 (Aug.) 1937.

2. Plaut, H. F.: Fracture of the Atlas in Automobile Accidents, J. A. M. A. **110**: 1892 (June 4) 1938.

and the mechanism is quite similar to that of a semisolid blow on the vertex.

Sinberg and Burman [3] state that the fracture may b unilateral or bilateral and in the posterior arch where the lateral masses are narrowed by the groove of the vertebral artery. However, it is necessary to differentiate these fractures in the x-rays from congenital bony defects. Lack of fusion of the posterior arch may produce a bony defect which is usually near the posterior tubercle, with rarely more than a width of 10 mm. The characteristic fracture, of course, is recognized by the sharp edges of the fracture line and subsequent disappearance of this line and the development of callus.

REPORT OF CASE

B. R., a Negro aged 40, admitted to St. Luke's Hospital to the service of Drs. G. D. Delprat and Alanson Weeks on Dec. 15, 1944, had been struck on the head by a sack of grain weighing about 100 pounds about two hours prior to admission. At the time he was struck he was standing erect and facing straight forward. He believes he was unconscious for a few

Fig. 3.—The cast.

seconds and was then aware of lying on the ground and having severe "pain" in the base of the skull "and a pain in the right shoulder." On admission he had nuchal and right shoulder pain and tingling in the right upper arm. X-rays showed a fracture of the first cervical vertebra near the junction of its posterior and middle thirds, the fragments being in satisfactory position. Also there was a long rib attached to the right transverse process of the seventh cervical vertebra.

Preliminary treatment consisted of head traction, with only slight relief, and hot compresses to his painful shoulder. On December 19 he was placed in a plaster jacket with a helmet included, this holding the head in slight extension and with great comfort to the patient. On December 28 he was allowed up in a chair and after a few days was able to walk. The patient was subsequently discharged ambulatory.

On Feb. 9, 1945 the cast was removed and x-ray examination at this time showed the fragments to be in good position with callus present. A plaster (Thomas) collar was then applied, this being split after eight weeks to allow physical therapy three times weekly, the collar being reapplied after each treatment. After a month the collar was removed permanently. X-ray examination on March 7 showed partial bony union with the fracture line still visible, and a film on May 4 showed almost complete bony union.

At present the patient still has physical therapy three times weekly for residual stiffness and slight pain in the neck. Rotation of the head is limited about 20 per cent. He has occasional ulnar paresthesia in the right hand apparently due to the presence of the aforementioned cervical rib.

3. Sinberg, S. E., and Burman, M. S.: Fracture of the Posterior Arch of the Atlas, J. A. M. A. **114**: 1996 (May 18) 1940.

Council on Foods and Nutrition

ACCEPTED FOODS

The following additional foods have been accepted as conforming to the Rules of the Council on Foods and Nutrition of the American Medical Association for admission to Accepted Foods.

GEORGE K. ANDERSON, M.D., *Secretary.*

PREPARATIONS USED IN THE FEEDING OF INFANTS (*See* Accepted Foods, 1939, p. 156)

Beech-Nut Packing Company, Canajoharie, N. Y.

BEECH-NUT STRAINED CUSTARD PUDDING contains milk, sugar, rice, cornstarch, whole eggs, egg yolks, salt, vanilla and water.

Analysis (submitted by manufacturer).—Total solids 22.90%, moisture 77.10%, ash 0.88%, fat (ether extract) 2.05%, protein (N × 6.25) 2.38%, crude fiber 0.15%, carbohydrates (other than crude fiber) 17.44%, calcium 0.075%, phosphorus 0.060%, iron total 0.37 mg. per hundred grams, iron "available" (Bipyridyl method) 0.17 mg. per hundred grams, copper 0.15 mg. per hundred grams, specific gravity 1.68.

Calories.—98 per hundred grams, 28 per ounce.

Vitamins.—	Per Hundred Grams
Vitamin A, total	207 U. S. P. units
Thiamine	0.012 mg.
Ascorbic acid	0.018 mg.
Riboflavin	0.154 mg.
Niacin	0.18 mg.

Heinz Company, Pittsburgh.

HEINZ STRAINED CUSTARD PUDDING contains rice, sugar, salt, 50 per cent cream, whole milk powder, whole eggs, cornstarch, vanilla concentrate and water.

Analysis (submitted by manufacturer).—Total solids 23.57%, total sugar as sucrose 10.81%, acidity as lactic 0.07%, protein (N × 6.25) 2.98%, fat (by acid hydrolysis) 2.34%, ash 0.75%, salt 0.43%, total carbohydrates by difference 17.43%, calcium 81.0 mg. per hundred grams, phosphorus 61.0 mg. per hundred grams, iron 0.04 mg. per hundred grams, copper 0.05 mg. per hundred grams.

Calories.—1.03 per gram, 29 per ounce.

Vitamins.—	I. U./100 Gm.	Mg./100 Gm.
Carotene	54	.....
Thiamine	..	0.016
Riboflavin	..	0.101
Ascorbic acid	..	3.43

H. J. Heinz Company, Pittsburgh.

HEINZ STRAINED PEACHES contains peaches and sugar.

Analysis (submitted by manufacturer).—Total solids 22.32%, total sugar as sucrose 19.98%, acidity as citric 0.44%, protein (N × 6.25) 0.38%, fat (by acid hydrolysis) 0.22%, crude fiber 0.53%, ash 0.20%, salt 0, total carbohydrates other than crude fiber, by difference 20.53%, calcium 7.3 mg. per hundred grams, phosphorus 14.0 mg. per hundred grams, iron 0.25 mg. per hundred grams, copper 0.06 mg. per hundred grams.

Calories.—0.86 per gram, 24 per ounce.

Vitamins.—	I. U./100 Gm.	Mg./100 Gm.
Carotene	737	.....
Thiamine	...	0.012
Riboflavin	...	trace
Ascorbic acid	...	2.7

H. J. Heinz Company, Pittsburgh.

HEINZ STRAINED PEARS WITH FARINA contains pears (Bartlett & Winter Nellis), durum middlings, sugar, lemon juice, water and pear juice.

Analysis (submitted by manufacturer).—Total solids 23.83%, total sugar as sucrose 15.87%, acidity as citric 0.18%, protein (N × 6.25) 0.62%, fat (by acid hydrolysis) 0.12%, crude fiber 0.69%, ash 0.21%, salt 0.01%, total carbohydrates other than crude fiber, by difference 22.01%, calcium 9 mg. per hundred grams, phosphorus 16 mg. per hundred grams, iron 0.15 mg. per hundred grams, copper 0.05 mg. per hundred grams, lead 0.04 mg. per hundred grams, arsenic none.

Calories.—0.91 per gram, 26 per ounce.

Vitamins.—Thiamine	0.016 mg. per 100 grams
Riboflavin	0.013 mg. per 100 grams
Ascorbic acid	0.680 mg. per 100 grams

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SATURDAY, FEBRUARY 2, 1946

PARA-AMINOBENZOIC ACID THERAPY FOR TSUTSUGAMUSHI FEVER

Encouraging data as to the therapeutic value of para-aminobenzoic acid in the treatment of experimental tsutsugamushi disease (scrub typhus or "dangerous bug" disease) are reported by Snyder and his associates [1] of the Cairo unit of the United States of America Typhus Commission. Previously Zarafonetis,[2] a member of the typhus commission, had found that 2 small mouselike rodents (Gerbillus gerbillus and Gerbillus pyramidun) common in Asia, Africa and southern Russia are readily susceptible to Rickettsia orientalis. When inoculated intraperitoneally, subcutaneously or intravenously 100 per cent of the gerbilles succumbed to the disease. Smears of the peritoneal and pleural exudates showed numerous pleomorphic rickettsias within the cytoplasm of the pus cells. Following reported beneficial effects of para-aminobenzoic acid in the treatment of classic louse borne typhus in human beings,[3] the commission tested its possible therapeutic effect on gerbilles after lethal inoculation with several different strains of Rickettsia orientalis. The diet of the control gerbilles was a wet mash composed of 80 Gm. of dried, powdered Egyptian bread, 2 to 4 Gm. of sodium chloride, 60 cc. of milk and 40 cc. of tap water. Immediately after inoculation the treated rodents were changed to an identical diet in which 40 cc. of 9 per cent sodium salt of para-aminobenzoic acid was substituted for tap water in the mash.

In a typical experiment 15 rodents were inoculated with a 1:10 dilution of the peritoneal washings from a fatal case of the disease. All 7 of the normally fed control animals died between the ninth and the twelfth day after inoculation. Of the 8 treated animals but 3 died, a survival rate of 62.5 per cent. In a second series inoculated with a 1:100 dilution of the same peritoneal exudate all control animals died, while the survival rate was 87.5 per cent in the animals fed on the sodium salt of para-aminobenzoic acid diet.

Since gerbilles feed only at night, a new plan of therapy was then adopted. In this plan all gerbilles given this diet received a supplementary subcutaneous injection with 0.1 cc. of a 10.4 per cent solution of the sodium salt of para-aminobenzoic acid per 25 Gm. of body weight every eight hours from the fifth to the seventeenth day after inoculation. Of 130 control gerbilles inoculated with various multilethal doses of Rickettsia orientalis only 2, or 1.5 per cent, survived. Of 128 gerbilles given the same multilethal doses and afterward treated with the combined technic 105 survived, a survival rate of 82 per cent. The survival rate was as high as 90 per cent in certain other groups similarly treated. From these and other data the typhus commission recommends a clinical trial of the sodium salt of para-aminobenzoic acid in human tsutsugamushi disease. Clinical evidence [3] with epidemic louse borne typhus has shown that it is safe to give para-aminobenzoic acid to man in large amounts.

The commission offers no theory to explain these successful therapeutic results. A plausible theory, however, was suggested at an earlier date by Greiff [4] of St. Louis University. Greiff reported a similar therapeutic success from feeding 3 per cent para-aminobenzoic acid to mice previously infected with murine typhus rickettsias. He believes that the therapeutic effects were due to metabolic stimulation of host cells. This is in line with Zinsser's [5] earlier experimental evidence. Zinsser found that, under conditions of high metabolic activity as determined by rate of oxygen consumption, multiplication of intracellular rickettsias did not occur in Maitland tissue cultures.

The probability that para-aminobenzoic acid therapy is equally applicable to all rickettsial infections is increased by the demonstration by Anigstein and Bader [6] that 2 per cent para-aminobenzoic acid added to the diet of guinea pigs previously inoculated with Rocky Mountain spotted fever will usually protect them from all signs of the disease. Untreated control guinea pigs almost invariably succumb to the infection. Successful treatment of 1 human case of Rocky Mountain spotted fever by orally administered para-aminobenzoic acid has been reported by Rose and his associates [7] of Columbia University. The efficiency of para-aminobenzoic acid in the treatment of Carrion's disease and trench fever, however, has not yet been reported.

1. Snyder, J. C., and Zarafonetis, C. J. D.: Proc. Soc. Exper. Biol. & Med. **60**: 115 (Oct.) 1945. Murray, E. S.; Zarafonetis, C. J. D., and Snyder, J. C., ibid. **60**: 80 (Oct.) 1945.

2. Zarafonetis, C. J. D.: Proc. Soc. Exper. Biol. & Med. **59**: 113, 1945.

3. Yeomans, Andrew; Snyder, J. C.; Murray, E. S.; Zarafonetis, C. J. D., and Ecke, R. S.: Therapeutic Effect of Para-Aminobenzoic Acid in Louse Borne Typhus, J. A. M. A. **126**: 349 (Oct. 7) 1944.

4. Greiff, Donald; Pinkerton, Henry, and Moragues, Vicente: J. Exper. Med. **80**: 561 (Dec.) 1944.

5. Zinsser, Hans, and Schoenbach, E. B.: J. Exper. Med. **66**: 207 (Aug.) 1937.

6. Anigstein, Ludwik, and Bader, Madero N.: Science **101**: 591 (June 8) 1945.

7. Rose, H. M.; Duane, R. B., and Fischel, E. E.: The Treatment of Spotted Fever with Para-Aminobenzoic Acid, J. A. M. A. **129**:1160 (Dec. 22) 1945.

ORGANIZATION AGAINST CANCER IN GREAT BRITAIN

In 1942 cancer of the breast in the United Kingdom caused 7,877 deaths, of the uterus 5,094, of the larynx 1,206, of the tongue 1,033, of the lip 290. As these forms of cancer are curable in their early stages, the measures at hand to control cancer could probably have been used to better advantage. In the United States cancer of the breast in 1943 caused 16,140 deaths, of the uterus 16,968, of the larynx 1,490, of the tongue 1,231, of the lip 661. Unless treated effectively in the early stages cancer usually is fatal; hence high death rates from cancer of the forms mentioned indicate grave inadequacies in clinical cancer service, whatever the special reasons may be.

The problems of the practical application of the British Cancer Act of 1939 are now under the active consideration of governmental agencies and of medical societies.[1] In discussions on cancer both English and American physicians repeat that the patient frequently delays seeking medical care in good time from ignorance and fear. The physician may and often does fail to recognize early cancer. Nuttall [1] states that in England the condition is far advanced in 45 per cent of cancer patients when they first seek expert advice mainly because of their own fault but also to some extent of failures by attending physicians. The urgent need persists for continuous education in regard to the importance of early recognition and treatment of cancer. Cancer should be detected more and more at the stage when its presence usually can be proved only by skilful examinations. Patients should be taught to report symptoms as soon as noticed, and opportunities for immediate consultation and necessary aids to diagnosis should be provided. The slightest suspicion of cancer should be promptly confirmed or dispelled. The British Cancer Act provides not only for sufferers from cancer but also for those "suspect of cancer." When the diagnosis of cancer is made, there must not be any delay in skilled treatment. To meet these needs fully will require organized cancer services known to every practitioner and freely available to every patient, no matter what his means may be.

The British plan is to divide the country into self-contained regions with diagnostic units, treatment centers and facilities for the care of advanced cases. Public and private hospitals are to partake in each regional organization, with headquarters in a university city and with the necessary subcenters. Adequate facilities are to be organized for radiotherapy as well as for general and special surgery. The developments of British cancer services under governmental auspices will be observed with interest by all concerned with the control of cancer. Thus far there seems to be little evidence to prove that the system that prevails in Sweden, which provides free diagnosis and free transportation to government clinics, has materially reduced the deaths or death rates from cancer.

1. Discussion on Postwar Organization for the Treatment of Cancer, Proc. Roy. Soc. Med. **38**: 147 (July) 1945.

SILLY NAMES FOR PENICILLIN PRODUCTS

The name "penicillin," which truly reflects the source of the product, was deliberately chosen as a descriptive title. The modesty of the investigators led them to avoid eponyms. Now, however, leaders in the drug and chemical industries, apparently avid for the kind of profits that can be derived from well exploited medical specialties, have let their imaginations and their greed run riot in a search for specific trade names to designate some penicillin products.

In the January 1946 issue of *New Modern Drugs* are some extraordinary examples of this deliberate degradation of science. Instead of selling penicillin under its simple and well known name, they have become downright silly and offer penicillin under so many names that only a professional solver of crossword puzzles could guess the nature of the products that these names conceal.

Wyeth, Inc., is credited with marketing Amphocillin, Penioral and Bucillin, Squibb with Topicillin and Delacillin, Lederle with Ledercillin-G, and Hoffmann-La Roche, Inc., with Per-Os-Cillin. Some of these are for oral use, some for local application, one is to be mixed "before taking" with something else. The promulgators of these products and their sale are interested in helping their own pocketbooks by trying to make certain that the prescribing physician will limit himself to their products. One manufacturer naively combines his firm name with "cillin." There are more than twenty manufacturers. Carried to a logical conclusion that would give us not only "Ledercillin" but also "Squibbcillin," "Abbottcillin," "Schenleycillin" and "Commercial Solventscillin" plus some others.

But who could guess that Amphocillin and Bucillin refer to penicillin for oral use? Who can believe that Delacillin is really penicillin calcium in peanut oil and beeswax? You might surmise the nature of Ledercillin-G, but we will lay 8 to 5 that you would miss on Penioral. Would you think it useful especially for gonorrhea? Well, that isn't it. Then what about Per-Os-Cillin? Something concerned with an opening, but which one?

Some day scientific aims and business promotion will be more closely knit. When that day arrives every one will breathe a sigh of relief, including the promoters. Perhaps they will finally realize that a scientific approach gains the confidence of the prospective buyers and really promotes use. Until then, time marches on.

SCIENTIFIC RESEARCH IN THE FOOD AND PHARMACEUTICAL INDUSTRIES

Recent addresses[1] before associations of manufacturers have stressed the funds spent on research. Of the manufacturing industries the food industry is the most important, since its products are of the first concern to the people. This industry employs more persons and produces more goods than any other industry. The food industries entered directly into scientific research, pure and applied, about twenty-five years ago as bulk sale on a commodity basis gave way to specialty sale on a brand basis. Research is conducted by single concerns and by groups. Numerous organizations carry on research in various divisions of the food industry. The Nutrition Foundation promotes the development of the science of nutrition. Recently[2] the foundation made sixteen grants to universities in aid of research amounting to $108,000. The major basic research in nutrition has been done and presumably will be done in universities and other centers of pure research. The food industry is deeply interested in the maintenance of this activity by these institutions in the most effective way.

What is the food industry actually spending for scientific research? Dunn's estimate is 24 million dollars a year, which is 10 per cent of what all industry is reported to have spent for research in 1940. In discussing the plans and prospects for expanding the scientific research of the food industry as the basis for progress in its business and service, Dunn voices serious concern over the present deficit in scientists. The reduction in bachelor's degrees in science which would have been given but for the war is about 150,000, and only 20 per cent of the usual number of doctorate degrees in chemistry and physics were awarded in 1945.

Second only to the food industry as an agency of human health and welfare comes the pharmaceutical industry. Here too progress in business and service depends on scientific research. In answer to the question how much this industry is spending on scientific research, Dunn presents estimates showing that in 1944 the amount so spent was 12 to 14 million dollars. He points out that, calculated in percentages of sales, the pharmaceutical industry appears to be spending more for scientific research than any other major branch of manufacture. And the industry looks forward to the progressive expansion of its research activities. In all scientific research, especially the pure and fundamental, the culmination of each advance is the beginning for new advances.

1. Dunn, C. W.: Scientific Research in the Food Industry: Its Basic Significance, thirty-second annual address by General Counsel of Grocery Manufacturers of America, Inc., Nov. 7, 1945 in New York. Scientific Research in the Pharmaceutical Industry, address by general counsel of American Pharmaceutical Manufacturers Association at midyear meeting in New York, Dec. 11, 1945.
2. Grants of the Nutrition Foundation, Science **102**: 661 (Dec. 28) 1945.

The keynote of these discussions of industrial expenditures for research is that progress in the food and drug industries as economic and social organizations depends on scientific research not only to reduce the costs of their products but particularly to produce new and better foods and drugs.

Current Comment

IS TUBERCULOSIS FULLY REPORTED?

The United States Public Health Service has recently released statistics on the number of cases of tuberculosis reported in relation to the number of deaths by states. Several states show a ratio of 1.0: Arkansas, South Carolina, Texas and Vermont. Rhode Island, on the other extreme, reports 5.8 cases of tuberculosis for every death recorded in that state. The simple mean in all the states reporting is 1.9 cases per death. This wide variation implies either that tuberculosis is much more frequent in some states than in others or that the thoroughness of tuberculosis case reporting varies widely. Figures from England indicate about 15 cases of tuberculosis per registered death, but the comparability with those of the United States is questionable. The evidence suggests that the recording of cases of tuberculosis in many parts of this country is incomplete. Unless this deficiency can be remedied it is almost impossible to evaluate the true proportions of the tuberculosis problem in the United States. Physicians are responsible for reporting all cases of tuberculosis to their local health departments and should see to it that this obligation is fulfilled.

SOCIAL AND ECONOMIC FACTORS IN INFANT MORTALITY

For years physicians have known that infant mortality is greatest in slum areas and that it is influenced by social and economic factors. Possibly these are more significant than the factor of medical care. Professor Dugald Baird[1] of the University of Aberdeen has analyzed the influence of social and economic factors on stillbirths and neonatal deaths. He concludes that the most probable explanation of premature labor is poor health and nutrition of the mother and that the stillbirth and neonatal mortality rates will be most substantially improved by improvement in the standard of health and nutrition of mothers in the low income groups. He found that prematurity is greater in Scotland than in England and also greater than in America. His statistics indicated that the excess of neonatal mortality in Scotland is due largely to the excess mortality from prematurity. The most common obstetric condition associated with prematurity is eclamptic toxemia, which he found to be twice as common among the poor as among the well-to-do for the same age and parity groups. Surveys showed that in Scotland before the war there was twice

1. Baird, Dugald: The Influence of Social and Economic Factors on Stillbirths and Neonatal Deaths, J. Obst. & Gynaec. Brit. Emp. **52**: 217 (June), 339 (Aug.) 1945.

as much poverty as in England, unemployment was greater, and slums and squalid living conditions were much more common. A careful study of the growth of women indicated that inadequate nutrition during the period of growth results in failure of the pelvis to develop properly, so that improvement in nutrition during pregnancy increases the risk because the child is large in relation to the size of the pelvis. From his study of the situation Dr. Baird concludes that improvement in social and economic conditions is the most important single factor in bringing about a reduction in the stillbirth and neonatal mortality rates in Scotland. Women of the lower income groups have poor physique and poor general health. Therefore continued improvement following better diets and better health services given to the mother during pregnancy is not the important factor. He is convinced that a minimal rate cannot be attained until all mothers have had the advantage of good food and environment from infancy to adult life.

IMMOBILIZATION OF LUNGS

Barach [1] reports the results obtained on 10 patients with advanced pulmonary tuberculosis who were treated by immobilization of both lungs in his equalizing pressure chamber. Cessation of voluntary respiration occurs in the living subject when an adequate flow of oxygen into the lungs and elimination of carbon dioxide are provided. Under these conditions the proprioceptive reflexes from the lungs do not stimulate lung movement. The individual remains comfortable, free from cyanosis, without the impulse to breathe and with a motionless chest. The chemical factors in breathing take precedence over proprioceptive reflexes. The equalizing pressure chamber was developed to apply equal pressure on the inner and outer surfaces of the chest wall at the same time. Continuous arrest of normal breathing was accomplished when patients were exposed to the equalizing pressure chamber in which the same alternating pressure wave of 110 mm. of mercury was produced, but a partition between the head and the chest of the chamber made possible a simultaneous arrival of an equal pressure on the two surfaces of the chest wall. The ability to dispense with the impulse to breathe required training, which was achieved by 1 patient in a period of forty-five minutes and by the majority of patients in three to four hours. Arrest of lung movement did not create any discernible changes in the circulation. There was no apparent change in the venous pressure, pulse rate, arterial blood pressure or circulation time. When voluntary respiration is abandoned, the impulse for movement of the voluntary muscles is strikingly diminished. Local lung rest favors the process of healing by reducing changes in the physical state of the tuberculous process and, in addition, has a specific effect on cavities in which a check valve action is present. The patients were treated in this chamber from 8:30 in the morning until 9:30 at night, being removed for meals. A course of therapy in most instances consisted of four months. The condition of all patients in the series was considered either too advanced or unsuitable for thoracoplasty. Significant improvement in the condition of 6 of the 10 patients was observed. The author concludes that this type of local lung rest aids the process of healing and tends to result in collapse of cavities.

1. Barach, A. L.: Immobilization of Both Lungs, Am. Rev. Tuberc. **52**: 122-144 (Aug.) 1945.

NUTRITION IN REVIEW

The Joint Legislative Committee on Nutrition of New York State, under the chairmanship of Senator Thomas C. Desmond, in its 1945 report [1] makes a number of recommendations, among them that the state recognize the need for an expanded program of nutrition education, encourage research in the field of nutrition, give new recognition to the special nutrition needs of children, give greater consideration to stiffer penalties for black marketeering and lend its influence to further experiments in the fluorination of community water. "Nutrition in Review" (Legislative Document [1945] No. 49) contains a number of interesting reports, among them an illuminating one by Dr. John M. Cassels on "The European Food Situation," on "Nutrition in Industry" by Dr. Thomas Dobbins and on the "Newburgh-Kingston Caries-Fluorine Demonstration" by Dr. David B. Ast. The report emphasizes in particular the importance of education as carried on by Cornell University, by the New York State Emergency Food Commission and by the Nutrition Foundation and the War Food Administration.

MILK TRANSMISSION OF DDT

Telford and Guthrie [1] of the Hess-Clark Research Laboratory, Ashland, Ohio, fed female rats each of which had a 1 day old litter a balanced chick mash containing 0.1 per cent of DDT. Typical tremors were noted between the sixth and thirteenth days in the mothers and between the fourteenth and fifteenth days in the young. By the eighteenth day all were dead except 1 adult and 1 nursling. Both recovered when placed on a diet free from DDT. Nine adult rats and one half-grown kitten were then fed solely on milk obtained from goats which received daily oral dosages of 1 Gm. of DDT per 8 to 9 pounds (3.6 to 4.1 Kg.) of body weight. All 10 died within two to twenty-nine days after exhibiting typical DDT tremors. Butter made from the toxic milk produced typical toxic symptoms, with eventual death in a second series of adult rats. These preliminary experiments prove that continuous oral administration of DDT to goats and rats results in the appearance of a toxic substance in their milk which produces symptoms indistinguishable from DDT intoxication. The data strongly suggest the need for more intensive research on the toxicity of milk from dairy cows which ingest DDT residues either from sprayed or from dusted forage plants or from licking themselves after being sprayed or dusted with this insecticide.

1. Report of New York State Joint Legislative Committee on Nutrition, Nutrition in Review No. 49, 1945, p. 3.
1. Telford, H. S., and Guthrie, J. E.: Science **102**: 647 (Dec. 21) 1945.

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MEDICINE AND THE WAR

SURPLUS MEDICAL EQUIPMENT FOR VETERANS OF WORLD WAR II

A procedure has been worked out whereby veteran physicians, dentists and veterinarians may purchase surplus army medical equipment directly from the disposal agency. The authority for this procedure is found in Public Law 457, 78th Congress, and appropriate regulations have been issued by the Surplus Property Administration.

In order to assist the individual in obtaining surplus property, there has been prepared by the Surgeon General of the Army, in collaboration with the disposal agency, a listing of items by army medical catalogue number, standard commodity classification number and army nomenclature, together with a price set by the disposal agency. This listing includes material appropriate for a professional office which was available as "declared surplus" in various army medical depots at the time the list was prepared. Supplemental lists are to be furnished as additional items become available. Copies of this list are being made available in service command headquarters, various army hospitals, medical depots and disposal agency offices. This listing should be used by individuals in preparing requests. It should be understood that not all of this material will be available in any one particular region, nor will the quantities of any given items be sufficient to satisfy all purchasers.

Veteran physicians, dentists or veterinarians should apply to the district office of the Smaller War Plants Corporation which is located nearest the veteran's residence. Effective January 28, district offices will be absorbed by the War Assets Corporation; however, it is expected that these district offices will remain in the same location. District offices are maintained in approximately one hundred and ten of the major cities throughout the country. The function of certifying applicants as to their eligibility to purchase surplus property, now performed by the Smaller War Plants Corporation, will be assumed by the War Assets Corporation as of January 28.

Having obtained certification that the applicant is a veteran and that the property applied for is to be used in his own small enterprise, prospective purchasers may present their requirements to the nearest regional office of the disposal agency or to the nearest district office of the War Assets Corporation, listing quantities desired by stock number and nomenclature as shown on the listing. Regional offices of the Office of Surplus Property RFC have also been absorbed by the War Assets Corporation, effective January 15, at which time the War Assets Corporation, a subsidiary of RFC, assumed the disposal functions for which the Office of Surplus Property RFC had heretofore been responsible. Regional offices are located as follows:

Atlanta 3, 105 Pryor St. N.E.
Boston 11, 600 Washington Street.
Chicago 4, 209 South La Salle Street.
Cincinnati 2, 704 Race Street.
Denver 2, 728 Fifteenth Street.
Fort Worth 2, Post Office Box 1407.
Los Angeles 14, Pacific Mutual Building.
Kansas City 8, 2605 Walnut Street.
New York 1, 350 Fifth Avenue.
Philadelphia, Lafayette Building, Fifth and Chestnut streets.
San Francisco 2, 30 Van Ness Avenue.
Seattle 1, 2005 Fifth Avenue.

Regional offices will advise the applicant as to items, quantity, condition, price, availability and location of material within that region. An extract, listing items desired but not available in that region, will be forwarded by the regional office to the central stock control point in Washington. Information as to availability in other regions will be furnished by the Washington office to the regional office for transmittal to the applicant. This information will also include the quantity, condition, price and location of these items. On receipt of this information, the applicant will notify the War Assets Corporation regional or district office of the items desired, forwarding certified check for the total amount involved. The disposal agency will then order shipments from the army or navy storage depot, where located, in accordance with the detailed shipping instructions supplied by the applicant. Shipment will be made, transportation charges collect, to be paid by the consignee.

Although samples of equipment are available for inspection by the purchaser, they are located in various depots throughout the United States, and it is impracticable to assemble all the items in one or more locations for inspection. Further, it is impracticable for individual purchasers to visit the numerous depots where material is located in order to inspect prior to purchase. It is not possible, in case individual items of equipment are inspected by purchaser, to tag any particular piece of equipment for the individual purchaser to be held pending receipt of shipping order from the disposal agency. Purchasers are familiar with army and navy equipment, having worked with it during their military service. Prices for new, unused equipment, in excellent condition, have been set by the disposal agency. The material is classified according to condition and will be billed by the disposal agency at fair value. Prices will be scaled downward if used equipment is furnished. If only new, unused equipment, in excellent condition, is desired, applicants will so state and depots will not make substitution of material in less desirable classification. All claims and adjustments will be handled by the War Assets Corporation. These claims must be presented to the district or regional office handling the original request for purchase. It must also be understood that surplus property sales are in progress at all times and that delivery of all items selected by the applicant cannot be guaranteed, nor will back orders be established. Payments for equipment not furnished will be refunded. To the extent of availability, equipment will be shipped from the medical depot nearest the destination designated by the purchaser. However, surplus stocks are not evenly distributed throughout the army and navy medical depot system, and shipments of some of the equipment will have to be made from depots at a considerable distance from the destination.

VETERANS

APPROVE WINTER GENERAL HOSPITAL FOR VETERANS ADMINISTRATION

President Truman recently approved the transfer of Winter General Hospital, Topeka, Kan., from the Army to the Veterans Administration as part of a plan for acquiring twenty-nine new hospitals and one home for Veterans Administration use.

Dr. Karl Menninger, who served as consultant in neuropsychiatry for the hospital under army control, has been named as temporary manager of the installation until the hospital is functioning regularly and then will resume his position as consultant to the Veterans Administration.

Dedication ceremonies of the Winter General Hospital, Veterans Administration, took place on January 11.

APPOINTED DIRECTOR OF TUBERCULOSIS SERVICE

Dr. John B. Barnwell of the University of Michigan, Ann Arbor, was recently appointed director of the Veterans Administration tuberculosis service, with Col. Roy A. Wolford of Washington, D. C., as associate director.

A new program for examination and care of tuberculous veterans was recently begun, of whom there are now approximately 100,000. The purpose is to prolong the good effects of hospital treatment after a veteran leaves a tuberculosis institution and to discover, at an early stage, any relapses.

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ARMY

5,000 ASTP MEDICAL OFFICERS TO BE CALLED AS REPLACEMENTS

In a recent release the War Department stated that more than 5,000 young medical officers will be called to active duty by July 1 as replacements for officers of the Medical Corps who are eligible for separation from the service. These doctors, after receiving their academic training in medicine under the Army Specialized Training Program, are now completing their training by serving internships and residencies in civilian hospitals on an inactive status.

Information of the early call to active duty has been sent to all civilian hospitals by the Surgeon General of the Army and by the Procurement and Assignment Service for Physicians, Dentists and Veterinarians.

The 5,000 doctors being called to active duty are graduates of the Army Specialized Training Program whose tours of active duty as medical officers were scheduled to begin when they had completed hospital internships and residencies, essential professional preparation not available in military installations.

Approximately 3,300 enlisted men now assigned to ASTP units for training in medicine will receive the degree of Doctor of Medicine by July 1, when the ASTP medical program is to be discontinued. This group will be called to active duty at the completion of their internships. The enlisted men assigned for instruction in the freshman, sophomore and junior classes in medicine will be separated from the program in March. Those who plan to continue their medical studies will be transferred to the Enlisted Reserve Corps and released from active military duty in order to continue their medical training in a civilian status.

Men separated from medical training under the ASTP who do not plan to continue their medical studies will be transferred to other military duties and continued on active duty until they become eligible for separation from the Army under current War Department policies.

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ARMY AWARDS AND COMMENDATIONS

Captain Neil M. Forbes Jr.

The Silver Star was recently awarded to Capt. Neil M. Forbes Jr., formerly of Laurel, Miss., who served as battalion surgeon for the 185th Infantry, 40th Division. The citation stated that the award was made for gallantry in action Feb. 16, 1945, when "Captain Forbes, without regard for his own personal safety, constantly exposed himself to heavy enemy fire to care for the wounded. On one occasion Captain Forbes received word that a soldier had sustained a severed jugular vein from enemy shrapnel on top of a hill. Realizing the danger to the patient's life and the slowness of the litter haul down the hill, Captain Forbes left the aid station, climbed part way up the hill and there, while under enemy sniper and mortar fire, worked for one and one-half hours and saved the man's life. Captain Forbes's tireless devotion to duty, his disregard for his own safety when lives of our troops are at stake, and great courage have been an inspiration to the men and a credit to the Army of the United States." Dr. Forbes graduated from the University of Tennessee College of Medicine, Memphis, in 1941 and entered the service July 2, 1942.

Lieutenant Colonel John Groopman

Lieut. Col. John Groopman, formerly of New York, was recently awarded the Air Medal "for meritorious achievement in aerial flight. He completed 151 hours of combat and operational flight between Oct. 23, 1943 and July 31, 1945, flying from bases in North Africa, India and China. These flights were made in the performance of his duties as flight surgeon and were made in unarmed transport type aircraft. Despite the dangers involved from probable attack from enemy aircraft and ground installations and adverse weather, Lieutenant Colonel Groopman demonstrated courage and determination in carrying out his missions. He went to the aid of wounded and ill personnel at forward bases and evacuated them to rear areas for treatment. The achievements of Lieutenant Colonel Groopman during the period cited reflect credit on his personal record and on the Army Air Forces." Dr. Groopman graduated from New York University College of Medicine, New York, in 1932 and entered the service Oct. 5, 1940. He has also been awarded the Purple Heart and the Soldier's Medal.

Major Cortez F. Enloe Jr.

Major Cortez F. Enloe Jr. of Manhasset, L. I., N. Y., was recently awarded the Bronze Star. The award was accompanied by the citation "for meritorious service in connection with military operations as chief medical sciences branch, Morale Division, U. S. Strategic Bombing Survey, from Feb. 5, 1945 to May 8, 1945. Because of his thorough medical professional knowledge, his technical and scientific experience in the pharmaceutical and biological industry and his knowledge of German medical and health affairs Major Enloe was given the difficult and responsible assignment of preparing plans and directing the Medical Science Branch of the Morale Division, U. S. Strategic Bombing Survey, in the scientific study of the effects of aerial bombardment on the health of the German civilian population. His enthusiasm, diplomacy and complete knowledge of his task enabled him to direct successfully the military and civilian scientists assigned to his command in the accomplishment of their medical research mission. The data compiled by this study will be of inestimable value in the future national defense plans of the United States." Dr. Enloe graduated from Friedrich Wilhelms Universität Medizinische Fakultät, Berlin, Prussia, in 1937 and entered the service Sept. 18, 1942.

Major Hugh M. Crumay

The Bronze Star and two oak leaf clusters to the Air Medal were recently awarded to Major Hugh M. Crumay, formerly of Mercer, Pa. The citation read, in part, "As air evaluation officer, Medical Section, Headquarters Far East Air Forces, Major Crumay demonstrated exceptional initiative and sound judgment in the performance of his duties." Dr. Crumay graduated from Harvard Medical School, Boston, in 1933 and entered the service July 17, 1942.

MISCELLANEOUS

HOSPITALS NEEDING INTERNS AND RESIDENTS

The following hospitals have indicated to the Council on Medical Education and Hospitals that they have not completed their house staff quota allotted by the Procurement and Assignment Service:

INDIANA

Memorial Hospital, South Bend. Capacity, 275; admissions, 9,180. Mr. Vernon T. Root, Administrator (interns, July 1).

LOUISIANA

Shreveport Charity Hospital, Shreveport. Capacity, 654; admissions, 10,320. Dr. Edgar Galloway, Medical Superintendent (resident—radiology).

NEW JERSEY

St. Joseph Hospital, Paterson. Capacity, 468; admissions, 7,636. Sister Anna Rita, R.N., Superintendent (resident—mixed service).

NEW YORK

Cumberland Hospital, Brooklyn. Capacity, 400; admissions, 5,729. Dr. Max Seide, Medical Superintendent (interns, April 1, July 1).

St. Vincent's Hospital, Staten Island. Capacity, 238; admissions, 5,920. Sister Mary Ignatius, R.N., Superintendent (interns).

General Hospital, Syracuse. Capacity, 170; admissions, 3,822. Mr. Carl P. Wright, Superintendent (interns).

Wyoming County Community Hospital, Warsaw. Capacity, 135; admissions, 2,699. Mr. W. A. Copeland, Superintendent (resident—mixed service).

OHIO

Lutheran Hospital, Cleveland. Capacity, 160; admissions, 4,926. Mr. Lee S. Lanpher, Superintendent (interns).

Youngstown Hospital, Youngstown. Capacity, 622; admissions, 17,297. Mr. David A. Endres, Superintendent (interns).

SOUTH CAROLINA

Columbia Hospital, Columbia. Capacity, 506; admissions, 8,902. Mr. P. A. Hodges Jr., Acting Superintendent (8 interns, April 1).

PHYSICIANS SEPARATED FROM SERVICE

ARMY MEDICAL CORPS OFFICERS RECOMMENDED FOR/OR RELIEVED FROM ACTIVE DUTY

Arizona

Herianek, Z. A., Capt., 906 Professional Bldg., Phoenix.

California

Bergman, H. H., Major, 3596 Mountain View, East Pasadena.
Bossert, Robert H., Capt., 319 S. San Fernando Rd., Burbank.
Burger, Raymond A., Capt., 1033 Gayley Ave., W. Los Angeles.
Doehring, P. C., Jr., Major, 1077 E. Foothill Blvd., Altadena.
Dorius, Glenn R., Major, 2206 MacArthur Blvd., Oakland.
Fehlmann, Frederick H., Lt. Col., 910 10th Ave., San Diego.
Fishbein, Allan A., Major, 2245 Anita St., Stockton.
Holleran, George C., Capt., 591 Western Ave., Brawley.
Hughes, Clifford M., Capt., 1426 Fair Oaks Ave., S. Pasadena.
Jorgensen, Melford B., Capt., Box 249, Los Gatos.
Kahler, James E., Major, 520 S. Lucerne Blvd., Los Angeles.
Kelley, William T., Capt., 652 Deodar, Oxnard.
Kocher, Rudolph A., Lt. Col., P. O. Box 926, Carmel.
Lewis, Robert, Capt., 2614 Haste, Berkeley.
Loomis, William F., Major, 28 Las Cascades, Orinda.
Lowe, Luther B., Capt., Crow's Landing.
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Pedersen, Christian B., Col., "casa Sierra," Tahoe.
Pogorel, Bernard S., Major, L.A. Co. G.H., Los Angeles.
Polse, Max L., Capt., Flood Bldg., San Francisco.
Rock, Joseph H., Major, Vet. Adm. Facility, Los Angeles.
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Illinois

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Choy, J. K. L., Capt., c/o Brinkman, 1911 W. Adams, Chicago.
Doud, Ernest A., Capt., 40 E. Oak St., Chicago.
Dulin, Theodore J., Major, Kankakee State Hosp., Kankakee.
Dwan, Francis M., 1st. Lt., 5458 W. Walton, Chicago.
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Eisin, Walter M., Capt., 7119 S. Sacramento Ave., Chicago.
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Hora, James L., Capt., 5742 W. Cermak Road, Cicero.
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Joss, Edward F., Capt., 408 E. S. St., Dwight.
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Miller, Leo F., Capt., 310 S. Michigan Ave., Chicago.
Mulliken, Oscar D., Capt., 832 N. Spring St., Elgin.
Neims, Irving M., Capt., 3509 W. Adams St., Chicago.
Nelson, George W., Capt., 201 N. Rockford Ave., Rockford.
Neuchiller, Bernard B., Capt., 444 W. Jackson St., Woodstock.
Orrico, Joseph F., Capt., 1029 S. Newberry Ave., Chicago.
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Perkins, William C., Major, 443 Summit Ave., West Chicago.
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Pugh, Charles E. Jr., Capt., 50 N. Menard Ave., Chicago.
Reimers, Leslie H., 1st Lt., 4301 N. Ashland, Chicago.
Rest, David, Capt., 2749 N. Sawyer Ave., Chicago.
Restarski, Alvin F., Major, 1609 Milwaukee Ave., Chicago.
Robertson, Thomas S., Capt., 1400 W. Monroe St., Chicago.
Rose, Frederick E., Major, Millstadt.
Rosi, Reno, Major, 635 E. 111 St., Chicago.
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Wrork, Donald H., Capt., 316 Fisher St., Rockford.
Wunsch, Charles L., Capt., 319 Simms St., Aurora.

Kansas

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Maine

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Massachusetts

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Brown, Stephen, Capt., 540 Elm St., Northampton.
Burrier, Walter P., Lt. Col., Vet. Hosp., Bedford.
Cohen, Jerome J., Capt., 74 Monadnock Rd., Worcester.
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Hamilton, Thomas S., Lt. Col., Mass. Gen. Hosp. Boston.
Hittel, Albert A., Capt., 24 Mattapan St., Mattapan.
Ingalls, Theodore H., Capt., 22 Kilburn Rd., Belmont.
Kelly, Edward J., Capt., 83 Tonawanda St., Dorchester.
Lepore, John J., Capt., 96 W. Main St., Marlboro.
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Michigan

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Hoyt, Arthur W., Major, 176 N. Ave., Battle Creek.
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Harris, Albert M., Major, University Hosp., Omaha.
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Vandiver, Howard A., Capt., Ogallala.

New Hampshire

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LaPointe, Roland E., Capt., 384 Wilson St., Manchester.

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Cooper, Robert A., Capt., 7137 Park Ave., Pemsaukeu.
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Dwoyer, Leon C., Major, 420 N. Wood Ave., Linden.
Fine, Irvin J., Capt., 30 Gordon St., Perth Amboy.
Friedenthal, Bernard, Major, 111 Bayard St., New Brunswick.
Gamsu, George, Lt. Col., 114 Weequahic Ave., Newark.
Goldstein, Samuel, Capt., 616 Farragut Ave., Mays Landing.
Harwitz, Morris, Capt., 418 Center St., Trenton.
Hawes, Vernon L., Capt., 63 Church St., Ramsey.
Kainer, Herbert, Capt., 851 Boulevard E., Weehawken.
Kearney, Edward P., Capt., 83 S. Fullerton Ave., Montclair
Kimmel, Charles, Capt., 488 Broad St., Bloomfield.
Lapin, Louis P., Capt., 15 Crosswicks St., Bordentown.
Levinson, David M., Major, 58 Clinton Pl., Newark.
Levinson, Ruben, 1st Lt., 241 State St., Perth Amboy.
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Muster, William J., Capt., 102 Liberty St., Ridgewood.
Papera, John J., Capt., 12 Sutton Pl., Verona.
Parry, Allen A., Capt., 46 Green Village Rd., Madison.
Pizzi, Peter J., Capt., 321 Harrison Ave., Garfield.
Provenzano, Samuel, Capt., 240 S. 7th St., Newark.
Roberts, Charles D., Major, 308 Booth Ave., Englewood.
Romano, Frank R., Capt., 926 Park Ave., Plainfield.
Seto, Stanford P. T., Capt., Blackwood.
Shaen, Edward, Capt., 3129 River Ave., Camden.
Shefrin, Norman, Capt., 1411 37th St., North Bergen.
Thompson, Edward C., Capt., 373 Park Ave., Paterson.
Tobey, Howard C., Capt., Elizabeth Gen. Hosp., Elizabeth.
Torppey, John J., Capt., 472 Sanford Ave., Newark.
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Wallack, Eli A., 1st Lt., 333 Fairmount Ave., Jersey City.
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New Mexico

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New York

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Agus, Haim, Capt., 5115 13th Ave., Brooklyn.
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Alexander, Frederick A. D., Capt., 521 Mercer St., Albany.
Alley, John L., Capt., 225 Lincoln Pl., Brooklyn.
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Ambinder, Nathan, Capt., 1212 5th Ave., Manhattan, N. Y.
Ande, Willard F., Capt., Kings County Hosp., Brooklyn.
Anfanger, Herman, Capt., 527 W. 110th St., New York.
Angelo, Martin A., Capt., 455 Eagle St., Buffalo.
Ash, Henry T., Capt., Kings County Hosp., Brooklyn.
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Cohlan, Sidney Q., Capt., 510 Shephard Ave., Brooklyn.
Cohn, Herman R., Major, 840 Montgomery St., Brooklyn.
Cole, Charles H., Major, 37 Stone Ave., Ossining.
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Cook, Edward D., Lt. Col., 33 Burbank Dr., Snyder.

PHYSICIANS SEPARATED FROM SERVICE

New York—Continued

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Cronheim, Kurt P., Capt., 5 W. 86th St., New York.
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Davis, Arthur C., Capt., 15 Notre Dame St., Glens Falls.
Davis, Richard F., Major, 24 Thomas Ave., Batavia.
Day, Marvin B., Capt., 129 E. 19th St., New York.
Denniston, Joseph C., Capt., Kenwood Apts., Middle Neck Rd., Great Neck, L. I.
Dickler, Emmanuel, Capt., 16 E. 98th St., New York.
Donaldson, James R., Capt., 155 E. 93d St., New York.
Doney, William F., Capt., 2 Notre Dame St., Glens Falls.
Duckman, Simon, Capt., 904 Bushwick Ave., Brooklyn.
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Feinberg, Irving P., Capt., Mary Immaculate Hosp., Jamaica.
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Flesch, Paul, Capt., 211 E. 179th St., Bronx.
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Foster, Harold E., Lt. Col., Vet. Adm., Northport.
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Frank, Morris J., 1st Lt., 16 Church St., Beacon.
Freedman, Bernard I., Capt., 1150 Brighton Beach, New York.
French, Willard G., Capt., 815 Carroll St., Brooklyn.
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Ganz, Samuel E., Capt., 171 W. 79th St., New York.
Garson, Byron J., Lt. Col., 40 Monroe St., Apt. DD, New York.
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Goldberg, Lawrence, Capt., 1920 77th St., Brooklyn.
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Gorman, Warren F., Capt., 133-33 Sanford Ave., Flushing.
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Hill, George W., Capt., 30 State St., Ossining.
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New York—Continued

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Lyons, Hyman C., Capt., 76 Sunnyside Ave., Brooklyn.
McCuaig, Duncan R., Major., 105 E. 63d St., New York.
McKay, Robert D., Lt. Col., 233 87th St., Brooklyn.
MacMillan, Stuart F., Major, 1721 Athol Rd., Schenectady.
Madison, George B., Capt., 1121 Teall Ave., Syracuse.
Manocchio, Angelo C., Capt., 2325 Ocean Parkway, Brooklyn.
Markulis, Emil J., Capt., E. Quaker St., Orchard Park.
Martoccio, Rocco J., Capt., 818 Bleecker St., Utica.
Mascaro, Joseph R., Major, 513 Bleecker St., Utica.
Maskin, Meyer H., Major, 34 W. 58th St., New York.
Mehrling, John H., Capt., 1433 Hancock St., Brooklyn.
Merin, Joseph H., Major, Bolton Landing.
Michelson, Alfred, Capt., 85 Olsen St., Valley Stream.
Miller John K., Lt. Col., 302 Washington Ave., Albany.
Miller, Morris L., Capt., 339 Wyona St., Brooklyn.
Montilli, Pasquale F., Capt., 273 Pleasant Ave., New York.
Moore, Alfred L., Capt., 43-55 Kissena Blvd., Flushing.
Moore, Samuel B., Jr., Capt., Eastview Farm, Eastview.
Moskowitz, Eugene, Capt., 20 Roosevelt Square W., Mt. Vernon.
Moss, Theodore J., Capt., 115 Pembroke Pl., Kew Gardens.
Muccillo, Carmine A., 1st Lt., 1565 74th St., Brooklyn.
Mullen, Joseph R., Capt., 296 Wheatfield St., North Tonawanda.
Mushabac, Irving R., Capt., 1325 Grand Concourse, Bronx.
Muss, Israel, Capt., 1030 E. Parkway, Brooklyn.
Naclerio, Thomas A., Capt., 104-40 205 Pl., Hollis.
Neier, Charles R., Capt., 85-35 150th St., Jamaica.
Neigus, Irwin, Lt. Col., 1497 Carroll St., Brooklyn.
Nonas, Gerson, Capt., 899 Belmont Ave., Brooklyn.
Norem, Walter, Major, 156 5th Ave., New York.
Novell, Samuel, Capt., 114-01 134th St., S. Ozone Park, L. I.
Novikoff, Samuel S., Capt., 1018 E. 163d St., Bronx.
Oppel, Theodore W., Lt. Col., 315 E. 68th St., New York.
Pallone, Amedo W., 1st Lt., 7604 17th St., Flushing.
Parke, William M. Jr., Capt., 1 Pierrepont St., Brooklyn.
Parnell, Christopher Jr., Capt., 1730 Highland Ave., Rochester.
Pasachoff, Samuel S., Capt., 910 Grand Concourse, New York.
Pearlman, Stanley M., Capt., 4700 Broadway, New York.
Perillo, Januarius A., Capt., 434 Seneca St., Buffalo.
Piegari, Felix H., Capt., 4039 Carpenter Ave., Bronx.
Polzinetti, Mario J., 1st Lt., 1529 Bay Ridge Pkwy, Brooklyn.

PHYSICIANS SEPARATED FROM SERVICE

New York—Continued

Potter, Stanley B., Capt., 104 Reid St., Fort Plain.
Price, Louis A., Capt., 35-45 79th St., Jackson Heights.
Pulvino, John L., Capt., 38 W. Genesse St., Clyde.
Rappaport, Eugene O., Capt., U. S. Marine Hosp., Staten Island.
Recupero, Joseph R., Capt., 1553 78th St., Brooklyn.
Rein, Charles R., Lt. Col., 580 5th Ave., New York.
Rhodes, Raymond L., 1st Lt., 11 Lexington Ave., Glens Falls.
Rice, John M., Major, Ball Ave., Watertown.
Robinson, John N., Lieut. Col., 755 Park Ave., New York.
Roemmelt, John C., Jr., Major, Rt. 2, Horseheads.
Romano, Jerome W., Capt., 181 Virginia St., Buffalo.
Rood, Morris, Major, 1336 President St., Brooklyn.
Root, John A., Capt., 87 W. Genesee St., Clyde.
Rosen, Leo, Major, 8220 Ft. Hamilton Pkwy., Brooklyn.
Rosenbaum, Louis, Capt., 300 E. 167th St., New York.
Rosenberg, Bernard H., Capt., 284 Rutledge St., Brooklyn.
Rosenfeld, Mortimer A., Major, 1208 Eastern Pkwy, Brooklyn.
Rosenthal, Harold C., Capt., 71 Hooker Ave., Poughkeepsie.
Ross, Mayer E., Capt., 1171 E. 27th St., Brooklyn.
Roth, Vernon E., Capt., 2 Reed St., Marcellus.
Rothburd, Charles M., Capt., 1641 Andrews Ave., New York.
Rousselot, Louis M., Col., 1235 Park Ave., New York.
Rower, Morris L., Capt., Box 1, Clayville.
Russell, Barnett, Capt., 1314 41st St., Brooklyn.
Rubenfeld, Sidney, Capt., 755 Park Ave., New York.
Schafer, Joseph, Capt., 33 Riverside Dr., Ap. 11A, New York.
Sheehy, James E., Capt., 29 Greene Ave., Brooklyn.
Schetlin, C. F., 1st Lt., Metropolitan Hosp., Welfare Island.
Schlesinger, Edward B., Capt., 700 W. 168th St., New York.
Schlesinger, Herbert L., Capt., 46 Cornelia St., Plattsburg.
Schloss, Jacob, Capt., 3 Linden Ave., Middletown.
Schnee, Isadore M., Capt., 789 MacDonough St., Brooklyn.
Schwartz, Julius, Capt., 8102 21st Ave., Brooklyn.
Schwartz, Mac, Capt., 1465 Broadway, New York.
Servoss, Spencer J., Capt., Rt. 3, Fruit Ave., Medina.
Shapley, Benjamin, Capt., 40-16 73d St., Jackson Heights.
Shaw, Rosewell D., Capt., Stottville.
Silverstein, Jacob M., Capt., 1561 E. 13th St., Brooklyn.
Sohmer, Abram, Lt. Col., 150-43 87th Ave., Jamaica.
Sohn, Harry, Capt., 2159 70th St., Brooklyn.
Sorrell, Alan H., Capt., 236 E. 5th St., New York.
Southwick, Edward H., Capt., 49 Jefferson Ave., White Plains.
Spatt, Samuel D., 1st Lt., 26 Balfour Pl., Brooklyn.
Spitzer, Joseph M., Lt. Col., 109-05 72d Ave., Forest Hills.
Stiegler, Charles F., Major, 163 E. 184th St., New York.
Stola, Augustus G., Capt., 3324 Perry Ave., Bronx.
Strahl, Milton I., Col., 225 New York Ave., Brooklyn.
Straubinger, Clarence A., Capt., 945 Genesse St., Buffalo.
Strenger, George, Major, 80 Lincoln Rd., Brooklyn.
Sullivan, Joseph D., Capt., 69-81 183 St., Flushing, L.I.
Tanenbaum, Morris, 1st Lt., 427 E. 98th St., Brooklyn.
Tanner, Ivins S., Capt., 611 Castleton Ave., Staten Island.
Teperson, Hyman I., Col., 744 Eastern Pkwy., Brooklyn.
Tobey, Albro C., 1st Lt., 828 Southport St., Elmira.
Toporoff, Louis, Capt., 1264 Teller Ave., New York.
Tornambe, Paul R., Capt., 338 E. 51st St., New York.
Towlen, Leonard J., Capt., 15 Vermilyea Ave., New York.
Traub, Paul M., Major, Washingtonville.
Travis, Richard E., 1st Lt., 324 Canisteo St., Hornell.
Trainor, George M., Capt., 104 Chelmsford Rd., Rochester.
Trutt, Irving, Major, 505 Avenue O, Brooklyn.
Tuby, Robert, Major, 868 Park Place, Brooklyn.
Turetsky, Samuel, Capt., 426 Rockaway Pkwy, Brooklyn.
Urbanowicz, Stanley T., Major, 1153 Broadway, Buffalo.
Vacca, Joseph G., Lt. Col., Benedectine Hosp., Kingston.
Van Hoy, Joe M., 1st Lt., Bellevue Hosp., New York.
Vanderburgh, Alexander, Capt., 85 Main St., Brewster.
Wadsworth, John H., Capt., 33 Grand St., Cobleskill.
Walls, Walter S., Lt. Col., 211 Lancaster Ave., Buffalo.
Ward, Robert L., Capt., 29-36 Curtis St., E. Elmhurst.
Welsh, John J., Major, 103-25 35th Ave., Corona.
W ston, Aaron S., Capt., 662 Miller Ave., Brooklyn.
Williams, G. D. (colored) Capt., 200 W. 113th St., New York.
Wolarsky, William, Capt., 50 W. 182d St., New York.
Wolfe, Herbert S., Major, 280 E. 173d St., Bronx.
Wright, Herbert John Jr., 1st Lt., St. Lukes Hosp., New York.
Zimmerman, Isidore, Capt., 5758 Kings Highway, Brooklyn.
Ziskind, Joseph, Major, 109 W. 120th St., New York.
Zurlo, Dominick A., 1st Lt., 94 Warren St., Glens Falls.

North Carolina

Adkins, Trogler F., Major, 2101 Club Blvd., Durham.
Baird, John A., Major, Vet. Adm. Facility, Fayetteville.
Brown, Charles W., Jr., Capt., Longwood Pk., Hamlet.

North Carolina—Continued

Brunson, Edward P., Lt. Col., 1025 E. Main St., Albermarle.
Bugg, Everett I., Jr., Major, Forest Hills, Durham.
Byerly, James H., Major, 316 Greensboro Ave., Sanford.
Daniel, Louie S., Capt., Bailey.
Dawson, Alonzo R., Lt. Col., Jefferson Stand. Life Ins. Co., Greensboro.
Edmondson, Frank, 1st Lt., 111 W. Phillip St., Tarboro.
Elliott, Julian C., Capt., Oxford.
Lentz, Julian C., Jr., 1st Lt., 1006 Lamond Ave., Durham.
Lincicome, Robert C., Capt., Duke Hosp., Durham.
Long, William M., Major, Mocksville Hosp., Mocksville.
Lustgarten, Jack G., Capt., Buxton.
Markham, Blackwell, Capt., 516 Jackson St., Durham.
Phifer, Edward W., Capt., Morgantown.
Reque, Paul G., Major, 2023 Sprunt St., Durham.
Tyson, Woodrow W., Major, Mebane.

North Dakota

Canterbury, Ellis A., Capt., Grand Forks.
Dillard, James R., Lt. Col., 303 Black Bldg., Fargo.
Tyson, John J., Major, 1128 7th St. N., Fargo.

Ohio

Anagnost, Basil D., Capt., 105 17th St., Toledo.
Baker, Conrad S., Capt., 240 Woolper Ave., Cincinnati.
Baube, John Louis, Major, 926 E. High St., Mt. Vernon.
Boettner, John Fletcher, Lt. Col., 4360 E. Blvd., Cleveland.
Boice, Robert Roland, Major, 200½ East Main St., Pomeroy.
Bowman, Robert E., Lt. Col., 16129 Euclid Ave., Cleveland.
Broglio, A. S., Major, 10618 S. Highland Ave., Grafield Hgts.
Budd, John H., Capt., 4207 Archwood Ave., Cleveland.
Burgin, Bernard, Capt., 3580 Bogart Ave., Cincinnati.
Campion, Woodrow M., Major, Cleveland Clinic, Cleveland.
Caruso, Rocco J., Capt., 412 E. Main St., Eaton.
Catalona, William., Capt., Charity Hosp., Cleveland.
Chaney, Wilford E., 1st Lt., RFD, Pratts Fork.
Damstra, Eugene F., Major, 935 Harvard Blvd., Dayton.
Davis, Daniel, Capt., 2142 N. Cove Blvd., Toledo.
Dillahunt, David G., Capt., 3709 N. High St., Columbus.
Eisenberg, Samuel H., Major, 3424 S. Main St., Akron.
Engel, Walter G., Major, 4051 Clifton Ave., Cincinnati.
Falor, William H., Major, Akron City Hosp., Akron.
Fantum, O. J., Major, Van West.
Farris, Melvin E. (colored), 1st Lt., 1461 Crawford, Cleveland.
Gillespie, Benjamin S., Capt., Tacoma.
Gordon, Nathan G., Capt., Edwin Shaw San., Akron.
Greenberg, S. L., Major, Natl. Exch. Bank Bldg., Steubenville.
Haas, Max, Capt., 1308 17th St., Portsmouth.
Hamilton, Lester A., 1st Lt., 99 May Ave., Athens.
Hanrahan, F. R. Jr., Capt., 2236 Harcourt, Cleveland Heights.
Hanus, Joseph J., Capt., Vet. Adm. Facility, Chillicothe.
Harris, William G., Capt., 718 Elm St., Martins Ferry.
Hastings, Warren C., Capt., 1618 E. 115th St., Cleveland.
Hirst, David L., Capt., 102 S. 5th St., Miamisburg.
Inskeep, Lewis C., Major, 222 Lincoln Ave., Urbana.
Johnson, Walter A., Capt., 229 Superior St., Rossford.
Keller, William M., Capt., Box 702, Lodie.
Kessler, Ralph J., Capt., 4426 Glenway Ave., Cincinnati.
Keys, Francis G., Capt., 2416 Grant Ave., Cuyahoga Falls.
Knapp, Jack D., Capt., Lore City.
Krasne, Saul I., Capt., 470 Euclid, Wickliffe.
Krieger, Harvey, Capt., 2400 Ashurst Rd., University Heights.
Lapp, Henry T., Lt. Col., Utica.
Lerner, David L., Lt. Col., 3969 Lowry Ave., Cincinnati.
Leuchtag, Harry H., 1st Lt., 90 W. Long, Akron.
Levin, David K., Capt., The Plaza, Monroe St., Toledo.
Lytle, Robert P., Lt. Col., 14817 Shaker Blvd., Cleveland.
McCaffery, Robert J., Capt., 1595 Riverside Dr., Lakewood.
McCall, Edward W., Capt., Sciotoville Sta., Portsmouth.
Marley, Harold V., Capt., 19511 Nottingham Rd., Cleveland.
Messenger, Harold M., Major, 210 E. Main St., New London.
Miller, John F., Major, 482 Hudson Ave., Newark.
Nimitz, H. J., Lt. Col., Hamilton Co. Tuber. Hosp., Cincinnati.
Novinsky, Abraham, 1st Lt., 111 N. East St., Bethel.
Podesta, Joseph J., Major, 815 Ludlow Ave., Cincinnati.
Preston, Burman H., Capt., 3463 Cheviot Ave., Cincinnati.
Recroft, E. W., Capt., 18717 Winslow Rd., Cleveland.
Repasky, John G., Capt., Rt. 6, Box 510, Akron.
Schultz, William R., Capt., 841 Forest Dr., Wooster.
Seesholtz, John R., Major, 1317 Sylvania Ave., Toledo.
Smith, Kenneth M., Lt. Col., 1505 W. Seventh Ave., Columbus.
Smith, Merl B., Capt., 1015 Fernwood Ave., Toledo.
Taliak, Martin B., Capt., Pearl Rd., Strongville.
Thomas, Edward, Capt., Rt. 3, Youngstown.

PHYSICIANS SEPARATED FROM SERVICE

Ohio—Continued

Thompson, Roy H., Lt. Col., 1745½ Cliffview Rd., Cleveland.
Thornton, John J., Major, 2064 Adelbert Rd., Cleveland.
Udelf, Maxwell S., Major, 1021 Prospect, Cleveland.
Vail, Derrick T., Col., 2349 Bedford Ave., Cincinnati.
Vandeman, Philip R., Capt., 828 Fertuson Ave., Dayton.
Wade, Reynolds W. Jr., Capt., 4134 Vermass Ave., Toledo.
Welch, Jack H., Capt., 1832 Indianola Ave., Columbus.
Werle, Jacob M., Capt., 4478 Broadale Ave., Cleveland.
Williams, Foster M., Capt., 2901 Montana Ave., Cincinnati.
Yospur, D. H., Capt., Ohio Hosp. for Epileptics, Gallipolis.
Zeiders, Glenn W., Major, 303 30th St. N.W., Canton.

Pennsylvania

Abrams, Frank, Capt., 311 Amber St., Pittsburgh.
Bacchus, N. E., (colored) Capt., 1417 Lombard St., Phila.
Barratt, William E., 1st Lt., 186 10th St., Erie.
Behrend, Albert, Lt. Col., 1738 Pine St., Philadelphia.
Bower, John R., Capt., 350 W. Main St., Kutztown.
Bowman, H. W., Capt., 111 McCann Pl., Mt. Lebanon, Pittsbg.
Boyer, Randal A., Lt. Col., 4043 Baltimore Ave., Philadelphia.
Brandon, Thomas C., Major, 1075 W. 4th St., Williamsport.
Briant, William W. Jr., Lt. Col., 210 Seneca Dr., Mt. Lebanon.
Brice, Gratien B., Major, 214 N. Drake St., Titusville.
Brommer, Oliver R., Major, 3302 N. Broad St., Philadelphia.
Brown, Harry, Capt., Glen Moore.
Bruce, Edwin T. Jr., Capt., 7934 Cedarbrook Ave., Philadelphia.
Buch, Joseph J., Major, 103 Meadow Ave., Charleroi.
Burks, Charles J., Capt., 1422 Porterfield St., Pittsburgh.
Clark, John C., Major, 2228 S. Broad St., Philadelphia.
Clark, Walter S., Jr., Capt., 33 Main St., Burgettstown.
Clime, Gilbert N., Capt., 121 E. Lemon St., Lancaster.
Close, Henry P., Major, 99 W. Washington Lane, Philadelphia.
Closterman, Donald F., Capt., 505 Rutter Ave., Kingston.
Corman, Paul M., Capt., 110 N. Allegheny St., Bellefonte.
Cribbs, Delmas L., Capt., R. D. 4, Butler.
Crouse, George W., Capt., Smithton.
Daley, Norman L., Capt., 257 E. Princess St., York.
Dierwechter, R. J., Capt., 7222 Marsden St., Philadelphia.
Ehrler, August H., Major, 103 W. Main St., North East.
Eksterowicz, Francis C., Capt., 1553 E. Berks, Philadelphia.
Fannin, Thomas S., Capt., 16 Bushnell St., Bradford.
Feldman, Hyman A., Capt., 323 S. 20th St., Philadelphia.
Fischer, Arthur J., Capt., 5723 Solway St., Pittsburgh.
Gansman, David H., Capt., 278 W. Harvey St., Philadelphia.
Gaskill, H. S., Major, Merion & Yarrow Aves., Bryn Mawr.
Ginsburg, Isadore W., Major, 1301 Market St., Linwood.
Grady, James W., Capt., 126 Venango St., Johnstown.
Goldberg, Harold E., Capt., 413 S. Broad St., Philadelphia.
Grossman, Aaron, Major, 1350 Hamilton St., Allentown.
Gruber, Charles M., Jr., Capt., 128 Overhill Rd., Bala Cynwyd.
Grunnagle, J. F., Lt. Col., 4716 Ellsworth Ave., Pittsburgh.
Haimowitz, Samuel I., Capt., 1726 N. Paxon St., Philadelphia.
Haines, Harlan F., Capt., 7115 Llanfair Rd., Upper Darby.
Halporn, Benjamin, Capt., 1500 State St., Harrisburg.
Hand, Patrick J., Lt. Col., 111 N. Chester Pike, Glenolden.
Handler, S. Herbert, Capt., 882 N. 41st St., Philadelphia.
Harenski, Joseph E., Major, 38 Pocono, Greentree, Pittsburgh.
Hetrick, Gurney E., Capt., Lewisberry.
Hirsh, Herman, Capt., 1324 State St., Harrisburg.
Hoffman, Richards H., Major, 123 N. Allegheny St., Bellefonte.
Horn, Edward T., Jr., Capt., Reeders.
Jones, Charles G., Major, Paxtonville.
Jones, Clement R., Jr., Major, Dixmont Hospital, Dixmont.
Kaufman, Benjamin V., Capt., 1213 Vine St., Scranton.
Keefer, George P., Capt., 134 Fairview Rd., Springfield.
Keeling, Edward J., Major, 339 Wood St., Clarion.
Kirkwood, Turney L., Capt., Kittanning.
Kline, Robert W., 1st Lt., 517 Locust St., Kittaning.
Krieger, Alexander A., Major, 5526 Cavode St., Pittsburgh.
Lauria, Michael H., Capt., 2122 S. 15th St., Philadelphia.
Lavell, Meyer Q., Capt., 1000 Main St., Darby.
Lavelle, Paul E., Capt., Torrance State Hosp., Torrance.
Lerch, Thomas V. R., Major, 1136 Penn. Ave., Wyomissing.
Lieberman, George E., Capt., 4206 Chestnut St., Philadelphia.
Limberger, William A., Capt., 301 S. Church St., W. Chester.
Linn, Robert H., 1st Lt., Rawn Ave., Graterford.
Lipshutz, Harold, Capt., 8226 Westminster Rd., Elkins Park.
Mahoney, Vincent P., Major, 402 S. Ninth St., Connellsville.
Melnicove, Sidney, Capt., 33 E. Pottsville St., Pine Grove.
Neefe, John R., Capt., 4300 Spruce St., Philadelphia.
O'Hora, William A., Capt., 510 3d Ave., Scranton.
Phillips, Edward M., Capt., 410 Washington Rd., Pittsburgh.
Pogorzelski, George H., 1st Lt., 1226 Parade St., Erie.

Pennsylvania—Continued

Powell, Sydney J., Jr., Major, 29 Saunders Ave., Philadelphia.
Riley, Frank W., Major, 818 N. Bromley Ave., Scranton.
Rise, Wilson S., Capt., 1549 Ligonier St., Latrobe.
Robins, Isadore M., Major, 73 Main St., Luzerne.
Rosenberg, Irving, Capt., 4547 N. Warnock St., Philadelphia.
Royster, Henry P., Major, Univ. Hosp., Philadelphia.
Rudolph, Joseph, Capt., 110 E. Main St., Norristown.
Ryan, James J., Major, 4920 City Line, Philadelphia.
Schachterle, Ralph E., Capt., 123 E. Main St., Ephrata.
Schlechter, C. F., Capt., 1651 N. Cadwallader St., Philadelphia.
Schnall, Charles, Major, 728 N. 2d St., Philadelphia.
Schofield, J. T., Jr., Major, 5010 Castor Ave., Frankford, Phila.
Scully, John P., Capt., 6211 Howe St., Pittsburgh.
Sheedy, Leo P., Lt. Col., 6944 Thomas Blvd., Pittsburgh.
Silverblatt, Bernard L., Capt., 1825 Wightman St., Pittsburgh.
Stein, Samuel C., Capt., 919 N. 42d St., Philadelphia.
Strong, Paul T., Major, Chester Rd. & Harvard, Swarthmore.
Sutton, James A., Major, Avonmore.
Tuft, Harold S., Capt., 5609 Florence Ave., Philadelphia.
Underwood, Harry B., Major, 240 S. 2d St., Bangor.
Urbaitis, Peter W., Major, State Hospital, Wernersville.
Van Tilborg, L. D., Major, 7848 Montgomery Ave., Elkins Pk.
Wall, Norman M., Major, 127 N. 2d St., Girardville.
Warnick, Richard D., Capt., 4010 Hartel St., Philadelphia.
Welsh, Albert E., Jr., Major, 2001 Kinsey St., Philadelphia.
Werts, Kenneth G., Capt., Westport.
Whitaker, C. F., Capt., 208 S. Winebiddle, Pittsburgh.
Wright, Harold S., 1st Lt., 1003 Penna Ave., Brookline.
Zubritsky, Paul D., Capt., 615 Island Ave., McKees Rocks.

Rhode Island

Egan, Thomas A., Capt., 135 Ardmore Ave., Providence.
Hennessey, Kieran W., Capt., 520 E. Ave., Pawtucket.
Kiene, Hugh E., Lt. Col., 535 Lloyd Ave., Providence.
Wadsworth, George L., Capt., Rhode Island St. Hosp., Howard.

South Carolina

Adams, Edward N., Lt. Col., % McLeod Infirmary, Florence.
Brown, George C. Jr., Major, Walterboro.
Davis, John M., Lt. Col., 1731 College St., Columbia.
Hall, Henry F. Jr., Capt., Wagener.
Pamer, Eugene F., Capt., McColl.
Hankins, Thomas C., Capt., 108 Wilcox Ave., Marion.
Houseal, Robert W., Major, 909 College St., Newberry.
McFadden, Dossey H., Capt., 15 Cleveland St., Clinton.
McLane, Francis C., Major, N. Main St., Abbeville.
Meyers, Lewis, Capt., 301 W. Faris Rd., Greenville.
Michie, Donald E., Capt., 324 E. Godbald St., Marion.
Morse, Stanley F., Jr., Capt., Edgehill Plantation, Sumter.
Parker, Edward F., Major, 70 Hasell St., Charleston.
Thomason, Eddie H., 1st Lt., Olanta.
Way, Roger A., Major, 145 N. Converse St., Spartanburg.

South Dakota

Davidson, Henry E., Major, 415 W. Main St., Lead.
Dick, Fred, Jr., 1st Lt., 320 N. Dakota St., Vermillion.
Lipton, Morris L., Major, Rosebud.
Tiller, Harry C., 1st Lt., Mayesville.
Wyatt, Charles N., Col., 301 E. Coffee St., Greenville.

Tennessee

Barkdull, Edward W., Capt., Union City.
Bevis, William M., Lt. Col., Vet. Adm. Facility, Murfreesboro.
Brask, Holger K., Capt., Vanderbilt Univ. Hosp., Nashville.
Brooks, Julius C., Capt., 444 S. Crest Rd., Chattanooga.
Brown, Summer W., 1st Lt., 525 McCallie Ave., Chattanooga.
Chesney, Luther W., Capt., 2439 E. Fifth Ave., Knoxville.
Cogbill, Charles L. Jr., Capt., LaGrante.
Dietrich, Julius P., Capt., 32 Sawmill Rd., Crossville.
Faulkner, Roscoe, Major, Trenton.
Gambill, Ira M., Major, Neva.
Gilliland, Harold L., Major, St. Thomas Hosp., Nashville.
Hartung, Carl A., Major, 721 Broad St., Chattanooga.
Ingram, Calvin J., Capt., 128 Hurt St., Jackson.
Leeper, James A., Major, Lenoir City.
Lewis, Wiley D., Major, Western State Hosp., Bolivar.
Morton, James F., Capt., 1550 Waverly Rd., Kingsport.
Overton, F. W. T., Lt. Col., 516 Bennie Dillon Bldg., Nashville.
Preas, William G., Lt. Col., Preas Clinic Bldg., Johnson City.
Provost, Edwin K., Major, 1101 19th Ave. S., Nashville.
Rhea, Samuel D., Capt., 2504 Vanderbilt Pl., Nashville.
Roach, Donald R., Capt., 314 N. Hill St., Morristown.
Shull, James E., Capt., 410 Love St., Erwin.

PHYSICIANS SEPARATED FROM SERVICE

Tennessee—Continued

Taylor, Claud H., Capt., 1303 N. Ocoee St., Cleveland.
Vinsant, Lowell E., Capt., Knoxville G.H., Knoxville.
Wilson, Frank E., Lt. Col., 407 Dawson Pl., Knoxville.

Texas

Arnold, Hugh F., 1st Lt., Hemphill.
Bondurant, W. W. Jr., Lt. Col., 430 College Blvd., San Antonio.
Bonin, Wilfred Patrick, Capt., 1601 W. Alabama, Houston.
Burditt, Bucky L., Capt., 3301 Junius, Dallas.
Bussey, Charles D., Major, 813 Med. Arts Bldg., Dallas.
Carrigan, Thomas A., 1st Lt., Medical Arts Clinic, Brownwood.
Carrington, William L., Capt., 108 S. Canton St., Mexia.
Collins, Lawrence D., 1st Lt., 917 N. Haskell, Dallas.
Devereux, William P., Major, 4137 Druid Lane, Dallas.
Ducroz, James L., Capt., 5th & Spooner, Pasadena.
Dunlap, James H., Major, 3712 Lemmon Ave., Dallas.
Estes, Bates B., Capt., 3561 Bluebonnet, Corpus Christi.
Faber, Edwin G., Col., 407 W. Shaw St., Tyler.
Fisher, Rowan E., Capt., Baylor Hosp., Dallas.
Fisher, William C. III, Capt., 3214 Avenue P, Galveston.
Frachtman, H. Julian, Col., 2300 Caroline St., Houston.
Gard, Delmar Ray, Major, 409 14th St., Galveston.
Gibson, Norman T., Capt., PO Box 546, Robstown.
Handley, James J., Major, 3604 Washington St., Greenville.
Hargis, William H., Jr., Lt. Col., 231 Inslee, San Antonio.
Harrell, Frederick S., Lt. Col., 709 W. Elm, Olney.
Hatfield, Haskell D., Lt. Col., Box 56, Baytown.
Haugen, Ingvald J., Major, 1504 Jackson St., Amarillo.
Hayes, Lindley O., Capt., Denton.
Hewatt, John W., Major, 1316 Annis St., Ft. Worth.
Hosen, Harris, Capt., Port Arthur.
Hunter, Richard O., Capt., W. Clarke St., Bartlett.
Klein, James C., Capt., 421 House St., Lufkin.
Kooken, Robert A., 1st Lt., Hamilton.
Ladue, Charles N., Capt., 4115 Myer Ave., Dallas.
Levy, Louis J., Major, 129 Williamsburg Lane, Ft. Worth.
Lewis, Everett B., Major, 1712 Banks, Houston.
Peters, Isadore D., Capt., 313 2d Nat. Bank Bldg., Houston.
Pickens, Jay W., Lt. Col., Cleburne.
Pomerantz, Robert B., Capt., 414 Navarro St., San Antonio.
Reynolds, Avery M., Capt., Med. Arts Clinic, DeLeon.
Seyler, Louis W., Major 1202½ Main St., Commerce.
Sievers, Walter A., Major, Plaza Hotel, Gonzales.
Smith, Burt B., Capt., 4430 Pease St., Houston.
Swinny, Boen, Lt. Col., 532 Med. Arts Bldg., San Antonio.
Thomas, Clifford S., Capt., Box 876, Tahoka.
Walker, Marcellus A. Jr., Lt. Col., 1st Nat. Bank Bldg., Paris.
Webb, Robert W., Capt., 614 Med. Arts Bldg., Dallas.
Wheeler, M. S., Lt. Col., 1922 W. Gramercy St., San Antonio.
Wheelis, Brewer D., Capt., 1704 S. 11th, Waco.
Willis, Raymond S., Major, 5611 E. Grand, Dallas.
Youngblood, John W., Capt., 912 E. Wells St., Stamford.

Utah

Pace, Garland H., Lt. Col., 1104 E. 1st South, Salt Lake City.
Rosengreen, George E., Capt., 3059 Ogden Ave., Ogden.

Virginia

Baker, James Porter, Lt. Col., 1305 Grove Ave., Richmond.
Bell, Robert Franklin, Major, 51 Corling St., Petersburg.
Berner, Benjamin W. Capt., Univ. of Va. Hosp., Charlotesville.
Butterworth, R. D., Capt., 3102 W. Grace St., Richmond.
Byrne, Kenneth N., Major, 106 W. Washington St., Lexington.
Dalton, Horace M., Major, University Hosp., Charlottesville.
Drash, Everett C., Lt. Col., 1503 Gordon Ave., Charlottesville.
Ferrell, Henry H. Jr., Capt., Goochland.
Fitz-Hugh, Glassell S., Major, Mason Lane, Charlottesville.
Grossmann, William, Major, 4633 Hanover Ave., Richmond.
Guerrant, John L., Capt., University Hospital, Charlottesville.
Hall, Gordon D., Capt., Dumbarton.
Hanna, Michael I., Capt., Fairlawn, Covington.
Holmboe, Harris S., Lt. Col., Univ. Hosp., Charlottesville.
Kagan, Benjamin M., Major, 1207 W. Franklin St., Richmond.
Katzen, Bernard, Capt., Lewis-Gale Hospital, Roanoke.
Laird, Edmund G., Major, c/o Rev. W. H. Laird, University.
Leavell, Byrd S., Major, Ivy Terrace, Charlottesville.
Liebman, Joseph, Major, Norton Clinic, Norton.
Lueders, William, Jr., Major, Ridgeview Rd., Staunton.
Morgan, Thomas A., Major, 500 Lee St., Franklin.
Murrell, Thomas W., Jr., Major, River Rd., Richmond.
Pepple, Allen W., Major, 501 Franklin St., Richmond.
Sisson, Harold E., Lt. Col., Gen. Del., Haynesville.
Smith, Charles D., Lt. Col., 2802 DuPont Circle, Richmond.
Sutherland, Joshua P., Capt., Haysi.

Virginia—Continued

Terry, William P., Major, Charlotte Court House.
Thomson, James L., Major, Virginia Med. Coll., Richmond.
Thornton, W. N., Jr., Capt., U. of Va. Hosp., Charlottesville.
Thrift, George N., Major, Medical Arts Bldg., Richmond.
Tucker, H. St. G., Jr., Capt., 6501 three Chopt Rd., Richmond.
Waddell, William E., Capt., 18 Gordon St., Lexington.

Washington

Aronson, Samuel F., Capt., 1628 31st Ave., Seattle.
Baker, James A., Capt., Medical Bldg., Hoquiam.
Bassett, Louis H., Major, Rt. 1, Shelton.
Carlson, Carroll C., Capt., Med. Arts Bldg., Tacoma.
Clark, John A., Major, Route 7, Box 339, Seattle.
Dumouchel, Murray L., Capt., 104 14th St., Raymond.
Gill, Ronald M., Major, Mason City Hospital, Mason City.
Jacobsen, Richard W., Major, 1831 23d Ave., N., Seattle.
King, William V., Major, Burlington.
Kohl, Gerald C., Major, Sumner.
Lemere, Frederick, Lt. Col., 2339 Perkins Lane, Seattle.
Martin, John K., Lt. Col., 504 McGilvra Blvd., Seattle.
Meeske, Frederick L., Major, 2020 S. Adams St., Spokane.
Minthron, Herbert H., Capt., 1608 25th Ave., Longview.
Murphy, Norman W., Capt., 4516 E. 38th St., Seattle.
Nawrocki, Walter E., Capt., Cle Elum.
Schultz, Milton J., Capt., 310 2d Ave., North Renton.
Taylor, Ralph L., Major, 1155 State St., Bellingham.
Wagner, Clyde L., Major, 4128 12th Ave. N.E., Seattle.

West Virginia

Bobes, Solomon S., Lt. Col., 2711 Eoff St., Wheeling.
Brannan, Dorsey, Major, 209 S. Walnut St., Morgantown.
Cardey, Norman L., Capt., Winona.
Cook, Joseph R., Major, 1139 4th Ave., Huntington.
Dickerson, Leon A., Major, Scarbro.
Edmondson, Richard E., Capt., Suncrest, Morgantown.
Glassman, Dan, Capt., Morgantown.
Haley, John B., Capt., 304- 20th St., S. E., Charleston.
Jarrell, Cecil A., Capt., 1503½ W. Washington St., Charleston.
Justice, Edward L., Major, Weirway, Hollidays Cove.
Laslie, James C., Major, 907 Edgewood Ave., Charleston.
McNinch, Eugene R., Capt., Weirton.
Myers, Elmer E., Capt., Philippi.
Nestmann, Ralph H., Capt., 118 N. 18th St., Wheeling.
Nutter, Phosa D., Major, Russellville.
Ralston, James G., Major, 303 Concord St., Clarksburg.
Richmond, Bill B., 1st Lt., 312 N. Kanawha St., Beckley.
Richmond, William F., Capt., 312 N. Kanawha St., Beckley.
Sleeth, Clark K., Capt., 104 Maple Ave., Morgantown.
Smith, Claude B., Major, 65 N. Abney Circle, Charleston.
Smith, Darwin E., Capt., Box 453, Williamson.
Thornhill, George T., Jr., Capt., Bland Rd., Bluefield.
Taylor, Isaiah E., Capt., 312 W. 10th Ave., Huntington.

Wisconsin

Falk, Victor S., Capt., 1862 Mountain Ave., Wauwatosa.
Feurig, James S., Capt., Milwaukee Co. Hosp., Wauwatosa.
Guzzetta, Marcus M., Major, Brookfield.
Hannan, Kenneth D. L., Capt., Prairie du Sac.
Kammer, Walter F., Major, New Glarus.
Kidder, Earle E., Major, 703 Clark St., Stevens Point.
Leeb, Harry, Major, 2423 N. 44th St., Milwaukee.
Leede, William E., Major, State of Wisconsin G. H., Madison.
Lochman, David J., Capt., 2705 N. 41st St., Milwaukee.
Randolph, Robert C., Capt., 915 N. 8th St., Manitowoc.
Reinardy, Arthyr L., 1st Lt., Main St., Union Grove.
Savage, George F., 1st Lt., 3922 N. Farwell Ave., Milwaukee.
Schuler, William H., Capt., PO Box 90, Fennimore.
Seastone, Charles V., Capt., 3414 Circle Close, Madison.
Sprague, John T., Capt., 32 Paget Rd., Madison.
Wolf, Alfred H., 1st Lt., 1902 State St., LaCrosse.

Wyoming

Allison, Lester F., Capt., Greybull.
Engelman, Alwyn A., Capt., Basin.

Hawaii

Chung-Hoon, Edwin K., Major., 282 N. Kukui St., Honolulu.
Cowan, Thomas W., Major, P. O. Box 93, Kahului, Maui.

Puerto Rico

Calderon, Aureo, Capt., Barceloneta.
Garcia, Leopoldo, Major, Central Aguirre Sugar Co., Aguirre.
Passalacqua, L. A., Lt. Col., P. O. Box 1848, Alahambra, Ponce.
Pou, Jaime F., Capt., Sagrado Corazon, Santurce.

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ORGANIZATION SECTION

PRESS COMMENT ON COMPULSORY SICKNESS INSURANCE

After President Truman sent his message on health to the Congress and the Wagner-Murray-Dingell bills were introduced, newspapers throughout the nation commented principally on the controversial compulsory sickness insurance feature. A majority of editors were opposed to extension of federal control over medical practice. Many considered the proposal merely a first step toward state socialism.

The Shreveport (La.) *Times* said, for instance:

Actually, the danger rests not in adhering to the present system but in venturing to experiment with Wagner's socialism. It is in the latter direction that the hazards are found, the grave risk that, in destroying incentive for progress in medicine, this progress will be ended.

No one contends that the present system is perfect. But no one can say honestly that it is not moving toward perfection, as rapidly as movement can be made safely in such a complex field, involving the lives and welfare of millions of Americans.

And then the Shreveport *Times*, after quoting almost wholly the editorial from THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION of December 1, concluded:

Regardless of whether *The Journal of the A. M. A.* is right in every detail of its editorial comment, it is quite evident that if federalized compulsory sickness insurance is not socialization it is a full step toward it; and socialization of the medical profession, in whole or in part, would be exactly the step the Washington theorizers would like to take toward socialization in far broader fields.

Many newspapers were highly complimentary to the quality of medical care available in the United States. The Kansas City (Mo.) *Times*, after quoting largely from THE JOURNAL editorial of December 1, concluded regarding the application of compulsory sickness insurance to America:

Its use in America is a question entirely too big for any hasty decision. The real question is whether it would not be far better to continue and further improve a medical system that has given this country health standards superior to those in any country that has adopted the compulsory plan with all its threatened regimentation and political control.

The Grand Rapids (Mich.) *Press* said:

One might concede the need for federal participation in the medical and hospital field were it not for one thing—and that is that nationally we have steadily been making notable progress in the extension of health services without the intervention of the government. On the other hand, there is no assurance that the quality or scope of medical care would be greatly advanced under any federally supervised program. We do know, however, that such a program would be expensive, that it would compete with existing institutions and that it would bring virtual regimentation to a field where thousands of delicate problems depend for their solution on individual and confidential relationships.

The Fillmore (Neb.) *Chronicle* commented:

The medical profession cannot be accused of being blind to the public interest. It has lifted the health standards of this nation higher than in any "socialized" nation. Its opinions should receive the most careful consideration.

The Baltimore *Sun* defended the quality of medical service generally available in the United States and described some of the many plans that have been developed to meet voluntarily the costs of medical care by prepayment insurance. It concluded:

In these varied programs is found striking evidence of the widespread consciousness of the need for better medical care looking to the ultimate goal of adequate care for all. Some of the programs may fail, for this is a typical American approach to a problem by the trial-and-error method. But where one succeeds other communities will be prompt to adapt it to their needs. Whatever may come out of it, we may be sure that health care will be far better than any we have known before.

Should this movement be ignored and discarded before we learn what it can do? Should we abandon this richly varied experimental approach for a set of alluring blueprints? This is what the advocates of a comprehensive scheme of tax-supported medical care, centrally administered by the federal government, are asking us to do. They are asking the country to throw away a system of medical care which despite many defects is fundamentally sound, and which is subject to constant improvement as experience points the way, for an entire new and untried plan.

As might be expected, the Chicago *Sun* in a number of editorials came out strongly for compulsory sickness insurance. Indeed it was certain that compulsory sickness insurance would be bound to prevail, saying:

It can be asserted with utmost confidence that some such system of medical care will be realized in this country at a not too distant date. Complacency about national health has been shattered by the shocking revelation of widespread unfitness among draftees and servicemen. Thousands of families have experienced the financial catastrophe of sudden illness which might have been eased or avoided by prepayment on insurance principles. The benefits of adequate care have been brought home to many young men and women who got such care for the first time while in service. The tide of public demand for better health will grow and swell until it can no longer be resisted.

Thus the real question before the medical profession is whether a national health program shall be put into effect with their aid and advice, or against their stubborn opposition. There may be legitimate differences of opinion on mechanics, but the principle of spreading the cost of medical care is here to stay. An enlightened medical profession will throw off the restraints of a misguided leadership and join the people in this great effort to broaden the base of national health.

In another editorial it urged that the medical care program be paid for principally from general taxes, not from payroll taxes, because it said:

Payroll taxes clip mass purchasing power at its source, and it is essential to keep purchasing power high. If the nation has a stake in national health, as it does, then part of the burden can most appropriately be borne by general taxes based on ability to pay, rather than by payroll deductions, which, like sales taxes, fall most heavily on the low incomes.

Finally, it attacked the proposal that voluntary plans developed on a nonprofit basis in the individual states meet the situation, concluding:

But the strongest point against the doctors' "plan" is that it will not accomplish what the people demand of medical insurance—an equitable spreading of medical costs among sick and well, rich and poor. Voluntary insurance would be open, as at present, only to those who can afford it and have the foresight to buy it. Low-income families would be excluded, as they are now; and so would millions of borderline families whose margin between income and outgo is so thin that medical expenses are never met until illness strikes.

By putting forth their "alternative," the doctors admit the need for basic change in the economics of medical care. But by refusing to face the issues they fail to meet the need.

The Chicago *Daily News* said:

The question is: what would it actually do; what would it actually cost; is it worth what it would cost; can we afford what it would cost, and what would its secondary effects be on medical practice and human welfare?

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And then it said:

Resentment of wage earners against the "deducts" is part of the troubled national psychology at this time. Workers tend to think of their wages as the amount that's left after the deductions. They often object to counting bonds, so readily cashable that they are the equivalent of cash, as part of take-home pay.

If anything like Mr. Truman's plan is adopted, labor will demand wage increases to make up the cost.

Many editors felt that the President was apparently unaware of the relationship between compulsory sickness insurance and socialization of medicine. The New York *Sun* felt that the President should have studied more carefully the extent to which his proposal represented socialized medicine. It said:

It will seem to many persons that President Truman has not gone far enough in testing this plan for marks of socialized medicine. It is true that physicians would not be employees of the federal government, but the intervention of Washington at every stage between the first sneeze and the last gasp would be so constant as to suggest state-dominated medicine, at the very least. The federal government would have complete control over collection and distribution of funds; it would have a corresponding say in fixing various standards to be met by communities or individuals. If this did not lead to socialized medicine, it would clearly result in firm establishment of federal control over a large area of medical practice.

The New York *Evening Post*, however, heartily endorses compulsory sickness insurance, assuring the doctors that it would give them more income and that it would not affect the personal relationship between physician and patient. The New York *Post* concluded:

The President has proposed a democratic solution to a pressing national problem. If the entrenched minority of doctors, centering around the Fishbein clique in the American Medical Association, succeed in killing it by their screams against "socialized medicine," they may finally get just that.

The Nashville (Tenn.) *Banner* said:

Leaders in the medical profession know the dangers invited by political control of medicine, however glibly its advocates dress it in words of innocence. . . . It is hardly likely that thinking American citizens will prefer political voices to authoritative medical voices on a subject involving life and health. It is inconceivable that thinking citizens will permit subjection of Medicine to the principles of boondoggling or assign it to the arrogant, untender mercies of bureaucracy.

And the Mount Carmel (Ill.) *News* went directly to the issue, asking:

"When the federal government forces a person to subscribe to a prepaid medical system sponsored by the government, is there any other name for it but 'state medicine'?" It continues, "In order to have your free choice you may have to pay your medical bill twice—once to the government for a doctor you don't want and again to the doctor of your actual choice."

The Omaha *World Herald*, among others, feared the political domination of medicine. It said:

As a matter of fact Dr. Washington is something of a quack. His rates are the highest in the world, but his patients often come down with palsy and creeping paralysis. And once they get into his clutches they are likely to stay there until the undertaker comes.

Let it be hoped, even at this late hour, that the American medical profession will be spared such a fate. For despite anything its detractors may say, American medicine is the best in the world. Nowhere in the socialist or totalitarian lands is there anything to match it.

The Columbus (Ohio) *Evening Dispatch*, after calling attention to a strike of dentists in Great Britain against the health insurance system, says:

For "dentists" read "doctors"; for "Surrey, Sussex, Kent and Hampshire" read "Ohio, Pennsylvania, New York and New Hampshire"; for "false teeth" read "appendectomies" or any common operation—and for the figures given substitute appropriate amounts.

This shows what could happen in the United States with the practice of medicine regimented by political controls. Bureaucracy and human nature are the same over here as in the British Isles. A few words such as this one to the wise—meaning the American voter—should be sufficient.

Discussing the President's message, the New York *Sun* found it confused and said that the main trouble seems to be "anxiety to please as many persons as possible and to offend as few as possible." It continues:

So, also, in his message on universal military training the President advocated it for men of certain ages, but didn't want these young men enrolled in the armed services—as neat a balancing of water on both shoulders as anybody could imagine. Likewise he has come out in favor of universal medical insurance—to be paid for largely by taxation—but says he opposed socialized medicine!

Apparently some editors were also confused. The Laguna Beach (Calif.) *South Coast News* has

"always felt that the public health is a legitimate field for state action, and belongs in the same category as public education, fire and police protection, and other simple public utilities."

It offers the suggestion that local committees composed of both member and nonmember doctors set the rates for practice and that in each area

"every registered M.D. may participate in a legal election to choose a committee to define standards for granting federal funds."

The *Wall Street Journal* too felt that the issue needed clarification. It said:

Throughout the message the President asserts, not without reason, that his recommendations are based upon the insurance principle of pooled risks and pooled funds with which to cope with individual disasters and disabilities. He states, too, his conviction that his nationwide system of medical services "must be highly decentralized in administration." If one recalls the prolonged and at times bitter controversies which the age-pension reserve fund and state versus federal control of unemployment compensation have provoked, one must gain some idea of the greater struggles which a "required prepayment" system of providing such intimate relationships as medical, dental and nursing care must go through before it is established by federal law.

We see little chance that Congress, despite the energy and intelligence with which its committees carry on their inquiries, can prepare itself to legislate wisely on the complex group of questions which Mr. Truman's latest message puts before it. A commission of the right sort could do much invaluable spade-work.

Then also the Asheville (N. C.) *Citizen* says "the Truman proposal is imperfect but it is no monster. It merits serious discussion, not cheap abuse." It further says:

The American people, the *Citizen* ventures to believe, do not want "socialized medicine" in the correct definition of the phrase. But they are not satisfied with the present system. They wish to see competent medical attention brought within the economic reach of all the people.

The Washington (D. C.) *Post* praised highly the President's message to Congress demanding a national health program and concluded:

There is nothing un-American about meeting the problem of ill health through social action. What the President has proposed is simply an orderly method of meeting the burden of medical care through prepayment and a reasonable distribution of that burden so that medical care can be genuinely available to all. He may be off the mark in detail, but he is right in principle and policy. Health, like education, must be the concern of our whole society, and we trust that the subject will receive the constructive attention that the presidential message deserves.

The Washington (D. C.) *News* indicated that none of the proposals made by Mr. Truman are new and that it is about time that there be a real hearing on the subject. Then it said:

And we aren't trying to be facetious when we add that consideration of these and all other proposals involving government spending should take due account of the health of the federal treasury. Some sort of insurance against a continued decline into deeper and deeper debt is urgently needed there.

The New York *Times* indicated the support which the President's health program may anticipate as follows:

The President may count on much support. Behind him stand the AFL and the CIO, both of which have endorsed not only compulsory health insurance but the payroll deductions and contributions by employers called for by the Wagner-Murray-Dingell bill; the American Public Health Association, which has a program much like his; the philanthropic organizations as a whole; some associations of liberal physicians, and powerful unions of farmers. Public health officers, too, will support the President, because his plan provides hope that at last they will be able to extend their activities to whole counties where there have been few physicians and too often no hospitals and laboratories at all.

The *Times* then emphasized the immense costs and the great size of the national debt.

The *Farmers Guide* (Huntington, Ind.) said that the American people "are exceedingly weary of compulsory this and compulsory that. They would like nothing better than to be permitted to live at least part of their lives unbossed by federal or union bureaucracies." The *Farmers Guide* continued:

If we can be compelled to set aside a part of our earnings for medical care that we may or may not need, why should we not be compelled to set aside another percentage to insure against dandruff or baldness or graying hair?

The President now appears as an advocate of compulsory military training, of compulsory medical insurance, compulsory price fixing, compulsory union membership and a host of other compulsions.

Why not include matrimony, paternity and membership in either the Democratic or Communist party?

Finally the Alexandria (La.) *Daily Town Talk* offered a calm summary of the situation:

Americans do not take well to compulsory anything, except in grave national emergencies, and then they rapidly return to voluntary action as soon as the crisis has passed.

Medicine now stands at a sort of crossroads. Behind it is a long, stately avenue that is dotted with monuments that represent the noble achievements of the profession under the American system of free enterprise. Across that road there seems to stand a rather impenetrable road block of social change. The road to the left is marked "Compulsory Sickness Insurance," and from it there runs a collateral road that is even darker, called "State Medicine." On the other hand, we can turn down the road to the right, which leads us into that realm of voluntary social security occupied by the various voluntary prepayment plans that have been developed for the administration of medical care. From this road extends also a collateral road of continued individual private practice of medicine.

Coming Medical Meetings

Annual Congress on Medical Education and Licensure, Chicago, Feb. 11-12. Dr. Victor Johnson, 535 North Dearborn St., Chicago, Secretary.

Conference of State Secretaries and Editors, Chicago, Feb. 8-9. Dr. Olin West, 535 North Dearborn St., Chicago, Secretary.

American Association of Pathologists and Bacteriologists, Chicago, March 8-9. Dr. Howard T. Karsner, 2085 Adelbert Road, Cleveland, Secretary.

American Orthopsychiatric Association, New York, Feb. 14-16. Dr. Nina Ridenour, 1790 Broadway, Room 916, New York 19, Secretary.

American Physiological Society, Atlantic City, March 11-15. Dr. Wallace O. Fenn, 260 Crittenden Blvd., Rochester 7, New York, Secretary.

American Society for Experimental Pathology, Atlantic City, March 11-15. Dr. Harry P. Smith, 630 W. 168th St., New York 32, Secretary.

Chicago Medical Society Annual Clinical Conference, Chicago, March 5-8. Dr. Warren W. Furey, 30 North Michigan Ave., Chicago 2, Secretary.

Dallas Southern Clinical Society, Dallas, Texas, March 18-21. Dr. John G. Young, 1719 Pacific Avenue, Dallas 1, Director of Clinics.

Federation of American Societies for Experimental Biology, Atlantic City, March 11-15. Dr. D. R. Hooker, 19 West Chase Street, Baltimore 1, Secretary.

Medical Library Association, New Haven, Conn., March 25-27. Miss Frida Pliefke, 2000 Medical Arts Bldg., Minneapolis 2, Secretary.

Missouri State Medical Association, St. Louis, March 24-26. Dr. Ralph L. Thompson, 634 N. Grand Blvd., St. Louis 3, Secretary.

National Conference on Medical Service, Chicago, February 10. Dr. Cleon A. Nafe, 822 Hume-Mansur Bldg., Indianapolis 4, Secretary.

Southeastern Surgical Congress, Memphis, Tenn., March 11-13. Dr. Benjamin T. Beasley, 45 Edgewood Ave. S.E., Atlanta 3, Georgia, Secretary.

Washington Letter

(From a Special Correspondent)

Jan. 28, 1946.

American Medical Association Accused of Misleading Public

Representative Biemiller, Democrat of Wisconsin, charged that the National Physicians' Committee had misrepresented the Wagner-Murray-Dingell bill to the public. He accused the American Medical Association of exerting pressure on Congress against compulsory health insurance and said that the organization was involved in a double deal in which it appeared to support voluntary health insurance while its "rear guard of expendables," the National Physicians' Committee, supplied "canned" advertisements to newspapers and inspired letters to Congress opposing federal health measures. Representative Biemiller appeared at a conference on a national program sponsored by the District of Columbia chapter of the Physicians Forum headed by Dr. A. T. Rand. Nelson Cruikshank, director of social insurance activities of the American Federation of Labor, also supported the Wagner-Murray-Dingell bill.

Admiral McIntire Writes on Health of Late President

Considerable attention was given here to the signed article in *Collier's* magazine by Vice Admiral Ross T. McIntire, personal physician to the late President Roosevelt, in which he said that the President had regained considerable lost weight and "every cause for anxiety seemed to have been lifted" before his sudden collapse and death last April. Just minutes before the President's collapse, he wrote, he had received an "optimistic" report on the President's health from Commander Howard Bruenn, one of the Navy's "fine internists," who was in personal charge of the President.

Hospital Signs Union Contract for Nonprofessional Workers

Emergency Hospital is the first hospital here to sign a union contract with nonprofessional employees, assuring wage increases up to $7.50 a week and ending a disagreement involving more than three years of litigation. The hospital's refusal to recognize the American Federation of Labor Building Service Employees Union almost resulted in a strike last July.

District Opposes Sharing Medical Center Costs

Commissioners of the District of Columbia have protested in a lengthy report to representative McMillan of the House District Committee against charging the capital for any portion of the proposed 1,500 bed hospital center. Commissioner John Russell Young states that District taxpayers are now paying about nine million dollars annually for the care of the sick.

Child Care Centers to Close February 28

Henry J. Sullivan of the Federal Works Agency has advised that after February 28 no federal funds will be available for child care centers in public buildings. Teachers and officers of child care centers are now endeavoring to arrange operation of the nursery schools on a cooperative basis.

Ninety Thousand Treated in Veterans Hospitals

The Veterans Administration has announced that the number of veterans receiving hospital treatment has passed 90,000 and revealed that progress is being made in recruiting more doctors and nurses under new regulations of the Department of Medicine and Surgery of the Veterans Administration.

Walter Reed Amputees Urge Artificial Limb Foundation

Amputees at Walter Reed Hospital have urged creation of a permanent foundation, financed primarily by private contributions, to aid the physically handicapped. They fear that artificial limb legislation will die as public sympathy wanes toward the nation's 14,000 war amputees. An editorial in the *Service Stripe*, weekly newspaper published by Walter Reed patients, criticized public apathy, which is claimed to have retarded artificial limb research during the past fifty years. A decision has not yet been made by Congress on government

sponsored artificial limb research. The House Labor Committee subcommittee on aid to the physically handicapped first urged that such research be centered in the U. S. Public Health Service but later recommended that the Veterans Administration take over the job. The final decision is to speed up pending Congressional action on legislation affecting all government health services.

Typhus Expert Honored for Work in Europe

While the nation's capital launched a program to exterminate rats, 22 per cent of which are reported to be infested with typhus-carrying fleas, Dr. Leonard A. Scheele, senior surgeon of the U. S. Public Health Service, was awarded the Typhus Commission Medal for "exceptionally meritorious service" in preventing the spread of the disease in northwestern Europe during 1944 and 1945. Already 1 child in the capital has been found to be infected with typhus. The medal was presented to Dr. Scheele by Dr. Thomas Parran, surgeon general, in services at the National Institute of Health in Bethesda. The citation with the award was read by Brig. Gen. Stanhope Bayne-Jones, commission director.

Nationalized G. I. Universities Proposed

Educational officials here are studying the proposal made at a meeting of the National Education Association veteran education conference in Cleveland that "G. I. universities" should be set up if present colleges and universities fail to accommodate war veteran students. An estimated 750,000 are expected to enroll by next September. Dr. Alonzo G. Grace, Connecticut commissioner of education, suggests that the federal government "has a responsibility to take over training facilities, including army and navy camps, and establish college and university opportunities for youths." He suggests that nonservice youths attend in order that veterans may have first priority on established colleges.

General Bradley Makes Appointments to New Medical Board

Veterans Administrator Omar N. Bradley has announced the first appointments under the new law creating a department of medicine and surgery in the agency which is not controlled by civil service. The appointment of Major Gen. Paul R. Hawley as acting director was purely "technical," as he has been serving in this capacity. Dr. Robert Webb, veteran of four years' service in the South Pacific, was named chief psychiatrist in the Washington regional office.

Progress in Reorganization of Veterans Administration

High praise for the progress made in reorganization of the medical department of the Veterans Administration was made by Representative Edith Nourse Rogers of Massachusetts in a tribute to Veterans Administrator Omar N. Bradley and Acting Medical Director Paul R. Hawley. She warned that they will continue to need the help and cooperation of the medical profession and the public.

University Offers Intensive Medical Postgraduate Courses

A series of intensive courses in postgraduate subjects will be available to veterans beginning February 11, according to Dr. Walter A. Bloedorn, dean of George Washington University School of Medicine. A grant from the W. K. Kellogg Foundation enables eight courses to be scheduled within allowances of the G. I. Bill of Rights.

Meeting of Hospital Service Plan Commission

The quarterly meeting of the Hospital Service Plan Commission of the American Hospital Association has been held at the Hotel Statler. John R. Mannix, commission chairman and director of the Chicago Blue Cross Plan, presided, and in charge of arrangements was C. Rufus Rorem, commission director.

Medical Legislation

MEDICAL BILLS IN CONGRESS

Social Security

H. R. 5116, introduced by Representative King, California, proposes to amend the Social Security Act to provide for payment for hospital, medical and health services to needy aged persons, to dependent children and to needy blind persons.

Commission for Physically Handicapped

Representative Sparkman, Alabama, has introduced H. R. 5206, to establish a Federal Commission for the Physically Handicapped. This commission, among other things, will be authorized to provide for medical, surgical and therapeutic treatments, the application of prosthetic or orthopedic appliances, hearing aids, eyeglasses and such other devices as may by their use enable physically handicapped persons to become proficient physically so as to be able to earn their own living, wholly or in part. The bill contains a title proposing an appropriation of $2,000,000 to the Public Health Service to be available for research, applied medicine and treatment, and necessary expenses to develop a cure for deafness. The bill indicates that additional titles will be added covering grants to the Public Health Service for clinics on the treatment of poliomyelitis and epilepsy.

Miscellaneous

S. J. Res. 128, introduced by Senator Murdock, Utah, proposes an appropriation of $500,000 to be used by the Administrator of Veterans' Affairs for the purpose of acquiring a site for, and building and equipping, a laboratory to be used in conducting scientific studies of artificial legs and appliances therefor.

Representative Lemke, North Dakota, proposes by H. J. Res. 298 that the veterans' hospital at Fargo, N. D., shall be known as the Clarence Theodore Hoverson Memorial Veterans' Hospital.

H. R. 5181, introduced by Representative Sumners, Texas, would authorize the use of the employees' compensation fund to furnish medical and hospital services to certain enrollees of the Civilian Conservation Corps.

H. R. 5193, introduced by Representative Lemke, North Dakota, proposes that no person shall be employed as an officer or employee of the United States as a pharmacist unless such person holds a degree in pharmacy based on not less than a two year college course in pharmacy or its equivalent.

STATE LEGISLATION

California

Bills Introduced.—A. C. R. 10-X proposes the adoption of a resolution to the effect that, if legislation is enacted establishing a medical school and center at the University of California at Los Angeles, the Board of Regents of the university give favorable consideration to the location of such institution in the San Fernando Valley. A. 88-X and S. 57-X propose to create a State Advisory Council on Hospital Facilities and to authorize the Department of Public Health to make a survey of existing public and private hospitals and health centers in the state, to evaluate the sufficiency of such hospitals and health centers to supply the necessary physical facilities for furnishing adequate hospital, clinic and similar services to the people of the state and to make recommendations for such additional facilities as may be necessary. S. 54-X proposes the appropriation of a sum of money to the California Polytechnic School to be used in part for the planting and cultivating of herbs and plants, the resins, gums and oils of which are used for medicinal purposes.

Bills Passed.—A. 35-X passed the assembly January 15. It proposes to authorize the appropriation to the Regents of the University of California of the sum of seven million dollars for the purpose of establishing, equipping and maintaining a medical school and center as a unit in the University of California at Los Angeles. A. 37-A passed the assembly January 17. It proposes to amend the business and professions code so as to increase the annual tax and registration fees of osteopaths from $5 to $10 for residents and from $2 to $10 for nonresidents.

A. 61-A passed the assembly January 17. It proposes an appropriation of four million dollars to the Regents of the University of California for the purpose of additional construction, improvements and equipment for the medical center of the University of California at San Francisco.

Massachusetts

Bills Introduced.—H. 301, to amend the medical practice act, proposes that all persons who matriculated at the Middlesex University School of Medicine and were duly graduated therefrom on July 24, 1944 and subsequently served as an intern in a hospital shall be eligible for examination and registration as qualified physicians. H. 767 proposes that all veterans of World Wars I and II, their wives and their children under 18 years, shall be given full hospital and medical care. H. 601, to amend the medical practice act, proposes that a state board of osteopathic examination and registration be established for the purpose of examining and registering persons desiring to practice osteopathy. H. 800, to amend the law relating to the practice of physicians in hospitals, proposes that no person registered as a qualified physician shall be refused the right to practice in a hospital supported in whole or in part by contributions from the commonwealth or any hospital endowed for charitable purposes and not operated for profit because said physician is not a member of any particular medical association, society or organization. S. 189, to amend the medical practice act, proposes that all physicians, after the removal of any limb or organ, whether or not written or verbal permission has been given by the patient and whether or not as the result of an accident the patient is unconscious and no near relative can be reached quickly, be required to deliver to the patient a written statement setting forth the nature of the operation which he performed and his reasons for considering such operation necessary. S. 259, to amend the law relating to the furnishing of medical care to recipients of old age assistance, proposes that no board of public welfare or old age assistance bureau shall set a rate of payment for medical services to recipients of old age assistance that is less than the accepted rate for medical services in the community in which the recipient lives, unless the physician is willing to accept a payment for his services less than the accepted rate. S. 263, to amend the medical practice act, proposes that any person who graduated from the Middlesex school of medicine on or before Dec. 31, 1945 and who subsequently served as intern in a hospital shall be eligible for examination and registration as a qualified physician. S. 264 proposes that no person shall be required to submit to vaccination or inoculation of any kind against his will as a condition precedent to admission to or attendance at any public school and that no certificate of vaccination or nonvaccination shall be required as an entrance requirement to attendance by any child in the public schools of the state. S. 386 proposes that the department of mental health be authorized to select and acquire a site for the erection of a state hospital for the treatment and study of persons who have degenerated in health through the excessive use of intoxicating liquors.

New York

Bills Introduced.—A. 94, to amend the education law, proposes the establishment of two medical colleges to be known as New York State Victory Medical College I and New York State Victory Medical College II, one to be located in New York City and one to be located in upstate New York. Each of such colleges shall be initially equipped to provide courses of instruction for four thousand pupils. A. 186, to amend the education law, proposes the establishment of a New York State Victory Medical College, to be initially equipped to provide courses of instruction for four thousand pupils. A. 294, to amend the laws relating to the construction of municipal hospitals, proposes that the city of New York be authorized to select and acquire a site and to erect and equip a public general hospital and dispensary to meet the present inadequate hospital facilities now existing within the city. S. 171, to amend the education law, proposes the establishment of a medical college to be known as New York State Medical College, initially equipped to provide courses of instruction for four thousand pupils. S. 265 and A. 245, to amend the education law, propose that the health service to be rendered to pupils in public schools shall include the necessary facilities to afford adequate physical examinations, including x-raying of the chest of all pupils annually. S. 268 and A. 215, to amend the public health law, propose the enactment of a law providing for a statewide system of health insurance. S. 283 and A. 123 propose that no professional schools shall deny an applicant admission thereto because of race, creed, color or national origin. S. 285 and A. 89, to amend the education law, propose the establishment of an institution to be known as New York State University, which shall include, among other things, a school of medicine. S. 332, to amend the civil practice act, proposes the authorization of the introduction in evidence in a law suit of hospital bills bearing a certification by the superintendent or head of the hospital that the bill is true and correct and that the amount charged therefor is the fair and reasonable value of the services rendered.

Virginia

Bill Introduced.—S. 21 proposes that the state board of health be authorized to initiate and administer a program of hospital treatment and care for indigent persons residing in the state.

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CONFERENCE OF STATE SECRETARIES AND EDITORS

The Annuel Conference of Secretaries and Editors of Constituent State Medical Associations will be held in the American Medical Association building in Chicago February 8 and 9. The program will be as follows:

FRIDAY, FEBRUARY 8—10 A. M.

Call to Order. R. L. Sensenich, Chairman of the Board of Trustees of the American Medical Association.

Current Status of Medical Legislation. J. W. Holloway Jr., Director, Bureau of Legal Medicine and Legislation.

Discussion: Joseph S. Lawrence, Director, Washington Office of the Council on Medical Service and Public Relations.

Plans for Medical Care in Rural Areas. F. S. Crockett, Chairman, Committee on Rural Medical Service.

Discussion: L. W. Larson, Secretary, North Dakota State Medical Association.

12:30 P. M. Luncheon.

FRIDAY, FEBRUARY 8—2 P. M.

Address. Harrison H. Shoulders, President-Elect of the American Medical Association.

State Plans for Aid to Returning Medical Veterans. George F. Lull, Associate General Manager of the American Medical Association.

Discussion: Victor Johnson, Secretary of the Council on Medical Education and Hospitals, and Robert C. Ayers, Director, War Property Distribution of the Federal Security Administration.

Plan for Furnishing Medical Care to Veterans. Col. James C. Harding, Veterans Administration.

Discussion: L. Fernald Foster, Secretary, Michigan State Medical Society.

FRIDAY, FEBRUARY 8—6:30 P. M.

Dinner Meeting of Editors of State Medical Journals
Palmer House, Crystal Room

Presiding. Lyman W. Mason, Editor, *Rocky Mountain Medical Journal.*

Clinic on Editorial Problems. Henry A. Davidson, Editor, *Journal of the Medical Society of New Jersey.*

SATURDAY, FEBRUARY 9—9:30 A. M.

Public Relations of American Medicine. Morris Fishbein, Editor of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

Discussion: John Hunton, Executive Secretary, California Medical Association, and Edward Stegen, National Physicians' Committee for the Extension of Medical Care.

Progress Toward a National Medical Prepayment Plan. Jay Ketchum, Executive Vice President, Michigan Medical Service.

Discussion: Edward J. McCormick, Chairman, and A. W. Adson, Member, Council on Medical Service and Public Relations.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH.)

CALIFORNIA

First Evans Lecture.—Dr. Wesley W. Spink, associate professor of medicine, University of Minnesota Medical School, Minneapolis, gave the first annual Newton G. Evans Lecture in bacteriology and pathology at the College of Medical Evangelists, Loma-Linda-Los Angeles, November 29. His subject was "Brucellosis: Diagnostic and Therapeutic Consideration." Dr. Evans, for whom the lecture was named, died December 19 in the White Memorial Hospital. He had been professor of pathology and director of research at the College of Medical Evangelists and formerly served as president of the college and dean of the medical school.

New Department of Medical Physics.—A department of medical physics has been established within the department of physics on the Berkeley campus of the University of California Medical School, to apply the products of the cyclotron to the study of health and disease and for human betterment. Close liaison will be maintained with the medical school and the radiation laboratory, as well as with the department of physics. Because of the war, many men of the science departments still are on leave. However, work in the new department, headed by Dr. John H. Lawrence, will go forward as rapidly as possible. At the present time the staff, in addition to Dr. Lawrence, consists of Dr. Joseph G. Hamilton, assistant professor of medical physics and assistant professor of medicine and radiology, Hardin B. Jones, Ph.D. (physiology) and Cornelius A. Tobias, Ph.D. (physics). The department will be housed in the Donner Laboratory for Medical Physics, a gift of the International Cancer Research Foundation, of which William H. Donner, Philadelphia, is president. It is situated near Crocker Radiation Laboratory, which was built to house the 60 inch cyclotron and is now devoted to medical physics for the most part. Much had been accomplished before the war with radioactive isotopes, such as carbon in the study of photosynthesis, sodium in numerous investigations and phosphorus in the study of plant growth and human health and disease, particularly polycythemia vera, for which it has become an established treatment. A cooperative program is being planned with the university's medical school in San Francisco which Dr. Lawrence believes will lead to important advances in the understanding of the human body in health and disease and to improvements in therapy. Neutron therapy for the treatment of cancer is to be continued and extended. The fall semester, which began in October 1945, marked the offering of one upper-division course entitled medical physics. This course gives an introduction to nuclear and radiation physics, electronics, biologic effects of radiations and an introduction to the tracer technic. Four additional upper-division courses are planned for the spring semester: an introduction to medical physics, photobiology, laboratory courses in medical physics, and medical physical aspects of aviation. Two degrees are planned, a Ph.D. in medical physics for students who have earned the M.D. and a Ph.D. in biophysics for others. These degrees will require the completion of a minimum number of courses in the fields of physics, chemistry, physiology, mathematics and medicine, to give a well balanced basic medical physics background, and completion of a certain amount of original research in the laboratory.

DISTRICT OF COLUMBIA

New Mental Hygiene Head.—Dr. Leopold E. Wexberg, New Orleans, has been appointed chief of the bureau of mental hygiene of the District health department. Dr. Wexberg came to the United States in 1933 after nineteen years of practice in Vienna. He succeeds Dr. John F. Owen, who resigned (THE JOURNAL, June 23, 1945, p. 604).

Stephen McDonough Goes to Minnesota.—Stephen J. McDonough Jr., Washington science editor of the Associated Press from 1933 to 1942, when he entered military service, has joined the staff of *Modern Medicine*, Minneapolis. Until his recent discharge as major in the medical administrative corps, Mr. McDonough served as chief of the planning board, technical information division, Office of the Surgeon General of the Army, and as a member of the committee on information of the division of medical sciences of the National Research Council. Mr. McDonough is a former secretary of the National Association of Science Writers.

ILLINOIS

Changes in Health Personnel.—Dr. James W. Chapman, Charlevoix, Mich., has been appointed director of the DuPage County Health Department, with headquarters in Villa Park, to succeed Dr. Sidney I. Franklin, it is reported.——Dr. Walter C. Wilhelmj, East St. Louis, has been appointed acting director of the East Side Health District, succeeding the late Dr. Robert C. Farrier.——Dr. Emil J. Bunata, who was recently released from military service, has returned to his position as health officer of Berwyn, the position he held when he entered military service in 1942.

Chicago

Health Educational Program.—The Mount Sinai Hospital on January 22 opened a series of meetings for the general public to disseminate information on how to maintain and enjoy good health. The meetings are to be conducted as forums where opportunities will be given to the public to ask questions and will be followed by a social period.

James Case Chosen President of Battle Creek Sanitarium.—Dr. James T. Case was elected president of the new board of the Battle Creek (Mich.) Sanitarium. The sanitarium and the Seventh Day Adventists General Conference recently settled a two year litigation with a compromise agreement. The operation of the Battle Creek and Benevolent Association is one of the results of the new setup (THE JOURNAL, Dec. 1, 1945, p. 971).

Dinner for Returning Faculty Members.—The faculty of medicine of Northwestern University Medical School, under the auspices of the medical division of the Alumni Association, will hold a dinner February 7 at the Furniture Club of America, 666 Lake Shore Drive. The event is in honor of members of the faculty who have served in the armed forces and will begin with cocktails at 5 p. m. and dinner at 7. Two hundred and fifteen members of the faculty served in various military divisions, most of whom have returned. Any member who has not received an invitation is urged to communicate with the Medical Alumni Office, 303 East Chicago Avenue. The telephone number is Superior 4500, extension 212.

Branch Meetings.—The North Side Branch of the Chicago Medical Society will be addressed February 7 by Dr. Max M. Peet, professor of neurologic surgery, University of Michigan Medical School, Ann Arbor. His subject will be "Surgical Treatment of Hypertension and Peripheral Vascular Disease." The North Shore Branch will hold a meeting at the Edgewater Beach Hotel, February 5. "Do's and Don'ts" will be discussed by the following in the respective subjects:

Dr. Harry Culver, Acute Urinary Retention.
Dr. Ovid O. Meyer, Madison, Wis., Relation to Anticoagulants.
Dr. Harry A. Oberhelman, "Acute" Abdomen.
Dr. Arthur R. Colwell, Evanston, Ill., Diabetic Coma.
Dr. Erwin R. Schmidt, Madison, Wis., Acute Intestinal Obstruction.

LOUISIANA

Personal.—Dr. Boni J. De Laureal was recently elected treasurer of the Orleans Parish Medical Society to succeed Dr. Paul G. Lacroix, who resigned because of ill health, both of New Orleans.

Grant for Hypertension.—The Winthrop Chemical Company has made a grant of $2,500 to the Alton Ochsner Medical Foundation for research in hypertension. The chemical phases of this problem are directed by Otto Schales, D.Sc., New Orleans.

Orientation Course in Allergy.—The American Academy of Allergy, under the sponsorship of the Louisiana State University School of Medicine, will give a five day orientation course in allergy in New Orleans, March 8-12, with headquarters at the Roosevelt Hotel. Inquiries should be addressed to the Dean's Office, Louisiana State University School of Medicine, 1542 Tulane Avenue, New Orleans 13.

MARYLAND

Anesthesiology Service Launched at University Hospital.—On January 1 the regular course of instruction in anesthesiology of the University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore, was augmented by the establishment of a separate service of anesthesiology in the University Hospital, the principal clinical teaching unit of the school of medicine.

DeLamar Lecture in Hygiene.—Dr. Willard F. Machle, formerly associate director, Kettering Research Institute, Cincinnati, and recently director, Armored Medical Research Laboratory, Fort Knox, Ky., gave the DeLamar Lecture in Hygiene at the Johns Hopkins University School of Hygiene and Public Health, Baltimore, January 8, on "Interrelationship Between Man, His Environment and Tasks."

Personal.—John E. Ransom has resigned as assistant director of Johns Hopkins Hospital, Baltimore, to become director of a survey of state hospitals in Georgia. The survey is under the auspices of the Georgia State Health Department and will involve the study of existing hospital facilities in Georgia for proposed expansion. Mr. Ransom is a former superintendent of the Toledo Hospital, Toledo, Ohio, and in 1941 served as executive secretary of the Hospital Council of Greater New York, according to the *Modern Hospital*.——R. Dale Smith, head of the department of biology at Gonzaga University, Spokane, Wash., has accepted the position of assistant professor with the department of anatomy of the University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore, beginning January 1, according to Dr. Robert U. Patterson.

MICHIGAN

Course in Occupational Health Postponed.—A twelve week orientation course in occupational health and medicine offered by the School of Occupational Health, Wayne University, Detroit, scheduled to begin March 4, has been canceled on account of the existing situation, which has closed so many industrial plants in which practical instruction was planned. A course will be offered at a later date to be announced when conditions permit.

Review Course for Physicians.—The University of Michigan Medical School, Ann Arbor, announces that review courses for returning medical officers and civilian physicians will be conducted at the university as follows: internal medicine, March 4-April 27; course for practitioners, April 29-June 22, and brief review courses in anatomy, internal medicine, allergy, cardiology, blood diseases, endocrinology and metabolism, therapeutics, gastroenterology, ophthalmology and otolaryngology, pediatrics and roentgenology in April, May and June. Requests for information should be addressed to Dr. Howard H. Cummings, chairman, Department of Postgraduate Medicine, University Hospital, Ann Arbor.

Change in Executive Administration.—A change in the executive committee of the University of Michigan Medical School, Ann Arbor, has been approved by the board of regents. Under the new plan the executive committee will consist of the dean of the medical school, the director of the University Hospital and four additional members of the executive faculty to be appointed by the board of regents on recommendation by the president of the university. The appointe members are to consist of a representative from each of two clinical departments and a representative from each of two preclinical departments. Previously there had been no provision for apportioning membership between the departments. The new plan had received approval of the medical school's executive committee and executive faculty before final approval was given by the board of regents.

MINNESOTA

New Professorship in Public Health.—The first permanently endowed professorship in the University of Minnesota Medical School, Minneapolis, was created recently as the Mayo Professorship in Public Health when the board of regents accepted endowment of that chair by the Mayo Properties Association. To pay the salary, which will not exceed $10,000, a gift of $150,000 was made to the university by the Mayo Properties Association, which specified that over and above the income from that sum the total will be made up from the income of the Mayo Foundation for Medical Education and Research. Dr. Harold S. Diehl, dean of medical sciences, said he thought appointment to the new chair would be made before July 1, when the next fiscal year begins. One other named professorship, the George Chase Christian professorship in cancer research, exists at the university but is not permanent, although it is still supported by gifts made when the Citizens Aid Society was liquidated. The school of public health was created in the medical school about two years ago when Dr. Diehl recommended that the then department of preventive medicine and public health become a school within the medical school, like the school of nursing. Dr. Gaylord W. Anderson has been head of the school from the first, although during the war he has been on leave as head of the division of medical intelligence in the Office of the Surgeon General, War Department. The Mayo Properties Association is the organization formed by the late Drs. Charles H. and William J. Mayo and their associates to hold and manage the assets of the Mayo Clinic. The Mayo Foundation for Medical Education and Research is an educational division of the University of Minnesota on the graduate level. It was first endowed with $2,000,000 in 1917, which sum was subsequently increased by $500,000 in 1934. It carries a broad program of graduate teaching, maintains laboratories and will now contribute to the new professorship. The school of public health was described by Dr. Diehl as one of six regional training centers in this country having as a principal function the training on the graduate level of doctors, engineers and nurses in public health matters to become specialists. For ten years past the school has had federal support of about $15,000 a year. Columbia, Harvard, Yale, Johns Hopkins and Michigan are other institutions which have such schools. Minnesota was designated a regular public health training center after the state health officers of the North Central group of states expressed a desire to have the federal government take that action.

NEW YORK

James Perkins Named Deputy Health Commissioner.—Dr. James E. Perkins, Delmar, director of the division of communicable disease, New York State Department of Health, was on January 7 appointed deputy health commissioner, succeeding Dr. Paul B. Brooks, who retired January 1 (THE JOURNAL, January 19, p. 163). Dr. Hollis S. Ingraham, Kingston, was named acting director of the division of communicable disease. Dr. Perkins recently returned after several months in Italy as an officer in the U. S. Public Health Service.

Cerebral Palsy Group Backs Local Project.—The Cerebral Palsy Association, formed by a group of parents in Rochester, voted at a meeting January 9 to support the project at Strong Memorial Hospital and the Rochester Municipal Hospital for the care of children with cerebral palsy (THE JOURNAL, Dec. 22, 1945, p. 1216). The Cerebral Palsy Association comprises about 95 parents of children afflicted with the disease. Lawrence Ross, previously chairman pro tem of the association, was named chairman at the meeting and Mrs. Herbert Soule, wife of Dr. Herbert C. Soude Jr., instructor in pediatrics at the University of Rochester School of Medicine and Dentistry, was named secretary. There are said to be about 300 children in Rochester affected with cerebral palsy. The parents who banded together originally planned to obtain funds to provide a spacious building for the care of these children.

New York City

Physician Chosen Princeton Board Member.—Dr. Fordyce Barker St. John has been elected a member of the board of trustees of Princeton University, Princeton, N. J. Dr. St. John graduated at Princeton in 1905 and at Columbia University College of Physicians and Surgeons in 1909, serving there currently as professor of clinical surgery.

Blood Transfusion Grants.—The Blood Transfusion Association of New York will resume grants-in-aid for research in the field of blood and blood substitutes in relation to transfusions. Those interested in obtaining such grants should write, giving full information concerning their projects, to Chairman, Research Grants Committee, 2 West 106th Street.

Hepatic Disorders.—On February 7 the New York Academy of Medicine will devote a meeting to the discussion of hepatic disorders, with Drs. Franklin M. Hanger Jr. speaking on "The Uses and Limitations of Liver Function Tests" and Allen O. Whipple and Arthur H. Blakemore on "Indications for Shunting Operations Determined by Pathologic Findings."

Judd Prize Goes to Allen Whipple.—The annual Judd Award of the Memorial Hospital for Cancer and Allied Diseases will be presented to Dr. Allen O. Whipple, professor and executive officer of the department of surgery, Columbia University College of Physicians and Surgeons, the New York *Times* announced January 17. Dr. Whipple was nominated for the award for having made the "greatest advancement to the discovery of a cure for cancer." The citation noted Dr. Whipple's special achievements in surgery in the field of cancer relating to the duodenum and pancreas, adding that his method "has established entirely new and successful opportunities for control and cure of a group of cancers previously deemed

hopeless." The Judd award was established in 1937 under the will of Katherine Berkan Judd, who died in 1934 and left a trust fund to provide an annual prize of $1,000 to encourage research in the causes and cure of cancer.

"Dean's Committee" to Recruit Doctors for Veterans' Hospitals.—Announcement was made January 5 of a "deans' committee," representing all five medical colleges in New York City, to cooperate with the Veterans Administration in the recruitment of physicians for veteran's hospitals. The New York City committee consists of Dr. Willard C. Rappleye, dean of the Columbia University College of Physicians and Surgeons, chairman; Dr. Jean A. Curran, president and dean of the Long Island College of Medicine, Brooklyn; Dr. J. A. W. Hetrick, president and dean of the New York Medical College, Flower and Fifth Avenue Hospitals; Joseph C. Hinsey, Ph.D., dean of the Cornell University Medical College, and Dr. Donal Sheehan, acting dean of the New York University College of Medicine. Anticipating recent enactment of a law creating a bureau of medicine and surgery in the Veterans Administration, the medical colleges set up the committee some time ago to work out methods of administration with Col. Harvey C. Hardegree, manager, and Col. John G. Hood Jr., clinical director, of the 2,000 bed Kingsbridge Veterans Hospital in the Bronx. The committee is empowered to nominate the professional staff at the hospital. A number of fifteen to twenty senior consultants from a list of leading New York specialists is to be nominated, this group to be supplemented later with about one hundred consultants to act as attending or visiting physicians, mostly on part time duty, and from sixty to eighty resident physicians on full time duty. The Kingsbridge Hospital now has 119 full time medical officers, some of whom will remain on full time or part time duty, while others will be assigned to other veterans' hospitals.

SOUTH CAROLINA

Dr. Ball Returns to State Position.—Dr. Robert W. Ball, Columbia, recently released from the army, has returned to his position as director of the division of maternal and child welfare of the South Carolina State Department of Health. Dr. Hilda Sheriff, Columbia, who served as director of the division in the absence of Dr. Ball, will become associate director.

Personal.—Dr. Mauldin J. Boggs, Abbeville, who has been health officer of McCormick and Greenwood counties, with headquarters at Greenwood, has been appointed health officer for Abbeville County, with offices in Due West.——Dr. Joseph Decherd Guess, Greenville, has been named editor of the Bulletin of the Greenville County Medical Society to succeed Dr. James W. Jervey, Greenville, resigned.——Dr. and Mrs. Robert Wilson, Charleston, observed their fiftieth wedding anniversary November 27.

New Head of Physiologic Chemistry.—Dr. William M. McCord, formerly associate professor of physiologic chemistry, Louisiana State University School of Medicine, New Orleans, has been appointed professor and head of the department of physiologic chemistry of the Medical College for the State of South Carolina. At a special meeting of the house of delegates of the South Carolina Medical Association and other members in Columbia, S. C., January 3, unanimous approval was given the construction program of the medical college. This includes a teaching hospital under ownership and operation by the medical school in addition to hospital teaching facilities provided by the Roper Hospital, with which a cooperative agreement has been established. A committee consisting of members from each county was established by the association to promote the medical college program.

TEXAS

Psychopathic Hospital Reopened.—The Galveston State Psychopathic Hospital, a unit of the University of Texas Medical Branch, Galveston, under the direction of Dr. Jack R. Ewalt, professor of neuropsychiatry, has reopened for the diagnosis and management of acute cases of mental disorder. The hospital was formerly under the direction of the state board of control but was transferred to the university by legislative action (THE JOURNAL, June 9, 1945, p. 454). Its bed capacity has been increased from 80 to 120. The hospital furnishes special facilities for teaching and research in neurology and psychiatry.

Medical Service Society Honored.—The Medical Society of Dallas was guest at a luncheon, December 15, given by the Southwestern Medical Foundation in recognition of its "service in medicine" in Dallas. The group, which represents the pharmaceutical houses in the area, was presented with a bronze plaque. The Medical Service Society of Dallas, whose membership is made up of representatives of various pharmaceutical houses in America who live in Dallas, was formed about two years ago. The Dallas chapter has adopted the medical library of the Southwestern College as a project and has been active in its development. The *Dallas Medical Journal* states that other chapters of the society are being organized, with some units already operating in Houston and Fort Worth.

UTAH

Activities at Utah Medical School.—Dr. Scott M. Smith has been named assistant clinical professor of anesthesiology and acting head of the newly established department of anesthesiology at the University of Utah School of Medicine, Salt Lake City. Gustave Albin Matson, Ph.D., who has been on active duty in the U. S. Sanitary Corps since 1942, has returned to his position at the university as associate professor of bacteriology. New appointments at the school include:

Dr. Randolph T. Shields, formerly resident in surgery at the University of Pennsylvania and more recently major in the U. S. Army Medical Corps in the China-Burma-India Theater, instructor in surgery.

Dr. Crichton McNeal, now stationed at the Army Institute of Pathology, Washington, D. C., instructor in pathology.

Dr. David W. Morgan, now at the Regional Hospital, Camp Swift, Texas, clinical instructor in psychiatry.

The Abbott Laboratories of North Chicago has made another grant of $1,500 to the department of pharmacology for the continuation of research on anticonvulsant and other drugs. The Amalgamated Sugar Company of Ogden has donated $300 to assist in remodeling Dr. Matson's research laboratory in the department of bacteriology. The Givaudan-Delawanna Corporation has granted to Dr. Philip B. Price, professor and head of the department of surgery, $5,250 for the investigation of skin disinfection. The Utah Medical Foundation has contributed $500 to the school of medicine for the purchase of books and journals for the medical library.

VIRGINIA

Health Council Formed.—Representatives of thirty-seven organizations interested in public health and medical care at a meeting in Richmond recently decided to establish a statewide health and medical care council and named a committee to work out details of the organization. W. T. Sanger, LL.D., president of the Medical College of Virginia, Richmond, will serve as chairman of the committee.

Dr. DeJarnette Leaves State Service.—Dr. Joseph S. DeJarnette, physician in charge of the DeJarnette Sanitarium, Staunton, has resigned, concluding fifty-six years' service to the state, according to *Southern Medicine and Surgery*. Dr. DeJarnette in 1939 was honored by the staff of the hospital for his completion of fifty years on the hospital staff. He graduated at the Medical College of Virginia, Richmond, in 1888 and began his career at the hospital as third assistant physician. He became superintendent in 1906. In 1928 he founded the DeJarnette Sanitarium, which is a unit of the Western State Hospital.

Gift to Medical School.—Dr. Charles S. Venable, chief surgeon of the Nix Hospital, San Antonio, Texas, has given the University of Virginia Department of Medicine, Charlottesville, $1,500 in war bonds in support of a lectureship in traumatic surgery which he established three years ago (THE JOURNAL, April 29, 1944, p. 1310). In the fall of 1942 Dr. Venable turned over to the university his royalty rights for an adjustable splint of his own invention to set up a lectureship as a memorial to his father, the late Charles S. Venable, who was for many years a member of the university faculty as professor of mathematics.

PUERTO RICO

Public Health Meeting.—The Public Health Association of Puerto Rico will hold its fifth annual meeting February 6-9 at the School of Tropical Medicine, San Juan. Among the speakers will be:

Dr. Milton J. Rosenau, Chapel Hill, N. C., president-elect, American Public Health Association.

Dr. John R. Heller Jr., Washington, chief, venereal disease division, U. S. Public Health Service.

Dr. Julio Bustos, chief, Social Health Department, Santiago de Chile.

Margaret Merrell, Sc.D., associate professor of biostatistics, Johns Hopkins University School of Hygiene and Public Health.

John M. Hepler, C.E., director, bureau of sanitary engineering, Michigan Department of Health, Lansing.

One session will be addressed by Gov. Rexford G. Tugwell, Hon. Luis Munoz Marin, president of the Senate, and Dr. Antonio Fernos Isern, commissioner of health of Puerto Rico.

GENERAL

Course for Pathologists.—The postwar educational planning board of the American Society of Clinical Pathologists, of which Dr. Robert A. Moore, St. Louis, is chairman, announces a postgraduate refresher course for pathologists returning from military service, to be held at the Drake Hotel, Chicago, March 2-5.

Conference on Proposed U. S. P. XIII Standards.—Following the pharmacopeial policy in recent revisions, an open U. S. P. conference has been arranged. Any one who is interested in the proposed new or revised standards is invited to present comments or suggestions looking to improvements in proposed U. S. P. standards as released in proofs and circulars. The conference will be held at the Hotel Pennsylvania, New York, starting on February 15. It will continue throughout the day and evening and probably on the following day, February 16. E. Fullerton Cook, Pharm.M., is chairman of the U. S. P. committee of revision.

Citizens Planning Committee for Health.—The Citizens Planning Committee has been organized by the National Health Council, 1790 Broadway, New York, to provide leadership in a movement to coordinate the work of some twenty thousand voluntary health agencies in the country. The committee comprises twenty-five leaders in public service and will work with the professional board of the council. Louis I. Dublin, Ph.D., New York, second vice president of the Metropolitan Life Insurance Company, is temporary chairman. The committee will formulate a plan to strengthen the National Health Council with new executive direction and a unified health education and fund raising program.

Training for Pediatricians.—The American Academy of Pediatrics has received a grant of $10,000 from Mead Johnson and Company to launch a program of placing physicians training in pediatrics available for physicians coming out of the armed services. The program, which is not confined to members of the academy, will include a recommendation for refresher courses, and for residencies that are vacant and other advanced positions. Facilities have been set up in the office of the secretary of the American Academy of Pediatrics, Dr. Clifford G. Grulee, 636 Church Street, Evanston, Ill. The creation of the service stemmed from a survey made by a committee on postwar planning and postwar courses of the academy, of which Dr. Irvine McQuarrie, Minneapolis, is chairman.

Special Society Elections.—At the annual meeting of the American Therapeutic Society at the Netherland Plaza Hotel, Cincinnati, November 11-12, Dr. Joseph F. Borg, St. Paul, was elected president; Drs. William Bryant Rawls, New York, Lucien A. LeDoux, New Orleans, and Nathan S. Davis III, Chicago, vice presidents; Dr. Oscar B. Hunter, Washington, secretary, and Dr. Daniel L. Sexton, St. Louis, treasurer.—Dr. Thomas L. Lee, Kinston, N. C., was elected president of the Seaboard Medical Association at its meeting in Virginia Beach, Va., December 13. He succeeds Dr. Antonio A. Burke, Norfolk, Va. Other officers include Dr. Clarence P. Jones Jr., Newport News, Va., first vice president, and Dr. Clarence P. Jones Sr., also of Newport News, who was reelected for his thirty-eighth consecutive term as secretary-treasurer.

Grants of the Commonwealth Fund.—Recent appropriations of the Commonwealth Fund, New York, include $304,000 for public health activities in Tennessee, Oklahoma and Mississippi, $204,000 for medical research and $121,000 for medical education. Among the research grants were one for the study of arthritis at the Harvard Medical School, Boston, and another for research in kidney and vascular physiology, with special reference to hypertension, at the New York University College of Medicine. A grant of $57,000 was made to Cornell University Medical College, New York, to establish a new clinic where physicians can be trained in a broader medical service than is now available, and $40,000 was granted to the Medical College of Virginia, Richmond, to initiate postgraduate educational services in eastern and southeastern Virginia. The Commonwealth Fund fellowships for British students, first offered in 1925 and interrupted in 1941 by the war, will be resumed next spring, when the British committee of award will be invited to nominate twenty fellows for 1946.

John Hubbard Named Director of Child Health Study.—Dr. John P. Hubbard, instructor of pediatrics (on leave), Harvard Medical School, and in charge of the cardiac clinic of the Children's Hospital, Boston, has been appointed director of a study of child health services of the American Academy of Pediatrics. Dr. Hubbard is directing the project under the auspices of a specially appointed committee of nine members on the study of child health service of the academy in cooperation with the U. S. Public Health Service and the U. S. Children's Bureau. Working with Dr. Hubbard are Drs. Katherine Bain, Washington, D. C., representing the U. S. Children's Bureau, and Charles L. Williams Jr., Wadesboro, N. C., representing the U. S. Public Health Service, both of whom are serving as field directors. Dr. Joseph Lachman, also on loan from the U. S. Public Health Service, is serving as executive secretary of the study in North Carolina, where the national project was launched (THE JOURNAL, Dec. 8, 1945, p. 1036). Dr. Hubbard, who was recently released from military service, will have headquarters for the national study in the Children's Hospital, Washington.

Gastroenterological Association Creates Prize.—The National Gastroenterological Association announces the establishment of an annual cash prize award of $100 and a certificate of merit for the best unpublished contribution on gastroenterology or allied subjects. Certificates will also be awarded those physicians whose contributions are deemed worthy. Contestants residing in the United States must be members of the American Medical Association. Those residing in foreign countries must be members of a similar organization in their own country. The winning contribution will be selected by a board of impartial judges, and the award is to be made at the annual convention banquet of the National Gastroenterological Association to be held at the Hotel Pennsylvania, New York, June 20. Certificates awarded to other physicians will be mailed to them. The decision of the judges will be final. The association reserves the exclusive right of first publishing the winning contribution and those receiving certificates of merit in its official publication, the *Review of Gastroenterology*. All entries for the 1946 prize should be limited to 5,000 words, be typewritten in English, be prepared in manuscript form, be submitted in five copies, be accompanied by an entry letter and be received not later than May 1. Entries should be addressed to the National Gastroenterological Association, 1819 Broadway, New York 23.

Science Writing Award Fund.—On January 14 the American Association for the Advancement of Science announced the establishment of the George Westinghouse Science Writing Award Fund to give national recognition to newspaper writers and newspapers contributing most to better popular understanding of the achievements of science and technology. It was stated that the fund had been provided by the Westinghouse Educational Foundation, which is supported by the Westinghouse Electric Corporation in commemoration of the hundredth anniversary of the birth of George Westinghouse. The fund will be administered by the American Association for the Advancement of Science to develop closer cooperation between scientists and news writers in keeping the public informed of scientific developments which more and more affect human lives in this atomic age. In addition to encouraging news writers of press associations as well as newspapers themselves to cultivate general sources of science news in their communities and the marshaling of the 27,000 scientist members of the American Association for the Advancement of Science to this end, the fund provided two annual awards: a cash award of $1,000 to a newspaper writer for outstanding science reporting of the year and a citation to the newspaper whose science news coverage in the preceding year is adjudged most complete and authoritative and most interestingly presented. There may also be awarded at the direction of the awards committee special citations in recognition of distinguished service in science journalism. The first annual awards, covering the year 1946, will be made at the winter meeting of the American Association for the Advancement of Science in December 1946. Details of the judging and presentation of awards will be made at the spring meeting of the association in St. Louis, March 27-31.

CORRECTION

Trichinosis.—In the article on "An Effective Method for the Control of Trichinosis in the United States" (THE JOURNAL, Dec 29, 1945), by Dr. S. E. Gould, there was an omission in the fourth sentence of the second paragraph in the right hand column on page 1254. This sentence should read "It has also been found that raw pork in commercial quantities may be rendered free of infective trichinae by lowering its temperature to minus 35 C. (minus 31 F.) or below and holding it at that temperature for two hours or by freezing at minus 17.8 C. (0 F.) for seventy-two hours."

Deaths

Newton Gurdon Evans ✠ Los Angeles; Cornell University Medical College, New York, 1900; born in Hamilton, Mo., June 1, 1874; taught pathology for a short while at the old American Medical Missionary College in Battle Creek, Mich., moving to the University of Tennessee College of Medicine, Nashville, where he taught pathology until 1911; joined the College of Medical Evangelists, where he became president and professor of pathology in 1914, serving as professor and head of the department until the time of his death, member of the board of trustees, vice president from 1931 to 1936, dean from 1927 to 1931 and again for one year beginning in June 1944; chairman of the board of the Alumni Research Foundation, College of Medical Evangelists; for many years pathologist and director of the laboratory of the Los Angeles County Hospital; specialist certified by the American Board of Pathology, Inc.; fellow of the American College of Physicians and the American Association for the Advancement of Science; member of the Los Angeles Pathological Society and in 1929 president, Los Angeles Cancer Society, president in 1936, American Association of Pathologists and Bacteriologists, American Society of Clinical Pathologists and the Los Angeles Academy of Medicine; retired lieutenant colonel in the medical reserve, serving as commanding officer of the U. S. General Hospital number 47 from 1926 to 1932 and from 1935 to 1937; one of the counselors of the Surgeon General's Library; on Jan. 30, 1945 his portrait was presented to the White Memorial Library; introduced cooperative plan of education in medicine; died in the White Memorial Hospital December 19, aged 71, of carcinoma.

Sumner Marcy Miller ✠ Peoria, Ill.; Northwestern University Medical School, Chicago, 1899; born in Farmer City, Ill., in 1873; since 1938 health officer of Peoria; president of the Illinois Public Health Association, of which he had been a founder; past president of the Peoria Medical Society; fellow of the American Public Healtl Association; a founder and for many years president of the Peoria County Tuberculosis Association; founder and first president of the Peoria County chapter of the American Red Cross, which he organized at the outbreak of World War I; later served as a captain in the medical corps of the U. S. Army; a director of the Visiting Nurses Association; a member and past president of the staff of the Methodist Hospital; served on the staff of the Peoria Municipal Tuberculosis Sanitarium; president of the Peoria X-Ray Laboratory; in 1941 received the Northwestern University award of merit for achievement in public health work; as the result of the advancements during his commissionership the city received a health honor roll plaque for the first place among cities under 150,000 from the American Public Health Association and from the United States Chamber of Commerce in 1943 and again in 1944; died December 14, aged 72, of carcinoma of the sigmoid.

Julian Mayo Cabell ✠ Lieutenant Colonel, U. S. Army, retired, Washington, D. C.; born in Richmond, Va.; Dec. 21, 1860; University of Virginia Department of Medicine, Charlottesville, 1886; entered the U. S. Army as an assistant surgeon in 1887; retired as a captain on March 29, 1897 for disability in line of duty; returned to active duty from May 1914 to December 1914 and from June 24, 1917 until he retired as a major in September 1919; retired with the rank of lieutenant colonel on June 21, 1930 under a special act of Congress; held the Legion of Honor and Purple Heart; served in the Spanish-American War and the Philippine Insurrection; surgeon on the hospital ship *Maine* during the Boer War; served during World War I; at one time superintendent of the Columbia Hospital for Women; died in the Walter Reed General Hospital November 15, aged 84, of carcinoma.

Clyde Madison Speck ✠ New Albany, Miss.; Vanderbilt University School of Medicine, Nashville, Tenn., 1912; served as associate in psychiatry at the University of Mississippi School of Medicine, University; fellow of the American College of Surgeons; past president and vice president of the Mid-South Postgraduate Medical Assembly; vice president of the state medical association in 1933 and president of the North Mississippi Medical Society in 1939; served during World War I; formerly medical superintendent of the Mississippi State Hospital in Whitfield; helped found the New Albany Hospital, where he died November 9, aged 58, following an appendectomy.

Ludwig Silverman Simon ✠ Los Angeles; College of Physicians and Surgeons, medical department of Columbia College, New York, 1894; an Affiliate Fellow of the American Medical Association; emeritus member of the Illinois State Medical Society; specialist certified by the American Board of Obstetrics and Gynecology, Inc.; fellow of the American College of Surgeons; formerly president of the medical staff and head of the department of obstetrics at the Michael Reese Hospital, Chicago; died in the Cedars of Lebanon Hospital October 7, aged 74, of uremia, arteriosclerotic heart disease and prostatic hypertrophy.

Vernon Scott Lilly ✠ Detroit; Ohio State University College of Medicine, Columbus, 1924; fellow of the American College of Surgeons; served during World War I; formerly industrial surgeon for the Parke-Davis Company; on the courtesy staffs, Woman's, St. Joseph's Mercy, Cottage, Florence Crittenton, Charles Godwin Jennings and East Side General hospitals; interned at St. Mark's Hospital in Cleveland and the Harper Hospital, where he served a residency, as assistant surgeon to outpatient department, division of surgery, and where he died September 27, aged 47, of coronary thrombosis.

Benjamin Trowbridge Tilton ✠ New York; Albert-Ludwigs Universität Medizinische Fakultät, Freiburg, Baden, Germany, 1893; an Affiliate Fellow of the American Medical Association; fellow of the American College of Surgeons; served as director of surgery at the Broad Street Hospital; for many years president and chief of the surgical service at St. Mark's Hospital, where he established a scholarship for nurses; consulting surgeon to the Lincoln and Manhattan State hospitals; died in Black Point, Conn., September 23, aged 77, of heart disease.

Charles William Rodgers Jr., Alexandria, Va.; University of Virginia Department of Medicine, Charlottesville, 1930; interned at the Gallinger Municipal Hospital and formerly resident physician at the George Washington University Hospital in Washington, D. C., where he was associated with the National Airport; member of the American Medical Association; formerly health officer, and on the staff of the King's Daughters' Hospital, Staunton; on the staff of the Alexandria Hospital, where he died October 9, aged 41, of subarachnoid hemorrhage and bronchopneumonia.

Luther Lefever Ames, Wichita, Kan.; College of Physicians and Surgeons, Keokuk, Iowa, 1880; died October 8, aged 94, of coronary occlusion followed by cerebral embolism.

Frank J. Austin, Laceyville, Pa.; University of Nashville Medical Department, 1910; member of the American Medical Association; died September 29, aged 81, of coronary thrombosis.

Francis Herbert Battey, Iowa City; Kansas Medical College, Topeka, 1893; died September 3, aged 79, of carcinoma of the prostate.

Martin Luther Bearden, Memphis, Tenn.; Memphis Hospital Medical College, 1909; member of the American Medical Association; died in the Baptist Memorial Hospital October 27, aged 63, of circulatory failure.

L. V. Bishop, Lancaster, S. C.; Baltimore Medical College, 1893; died October 9, aged 74.

James Alexander Boon, New York; Bellevue Hospital Medical College, New York, 1888; for many years a member of the U. S. Narcotic Bureau; died October 20, aged 79.

Henry Thomas Brogan, West Allis, Wis.; Wisconsin College of Physicians and Surgeons, Milwaukee, 1903; died in St. Joseph's Hospital, Milwaukee, October 9, aged 69, of arteriosclerosis and interstitial obstruction.

John Buckley ✠ Chicago; Illinois Medical College, Chicago, 1906; died October 29, aged 69, of acute dilatation of the heart and chronic myocarditis.

Alanson Capehart, Roxobel, N. C.; Bellevue Hospital Medical College, New York, 1887; served as bank president; died October 11, aged 80, of coronary thrombosis and arteriosclerotic heart disease.

Enos Ralph Cheney, Gypsum, Kan.; Kansas City (Mo.) Medical College, 1891; honorary member of the Kansas Medical Society; served in the medical corps of the U. S. Army during World War I; for many years served on the local school board, most of the time as director, and on the city council; died in a hospital at Wichita October 9, aged 74.

Roy William Chivers, Jackson, Mich.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1900; member of the American Medical Association; served as health officer and president of the board of health; on the staff of the W. A. Foote Memorial Hospital; died October 25, aged 67, of coronary occlusion.

Robert William Cotton ✠ Bellevue, Pa.; Western Pennsylvania Medical College, Pittsburgh, 1906; served during World War I; company surgeon for the Pittsburgh and Lake Erie Railroad Company; died in Baltimore October 14, aged 68, of coronary heart disease.

Richard F. Crabtree, Gamaliel, Ky.; Vanderbilt University School of Medicine, Nashville, Tenn., 1882; member of the American Medical Association; on the staff of the T. J. Samson Community Hospital in Glasgow; died October 17, aged 87, of chronic myocarditis.

William McKee Crosier ✙ Alexis, Ill.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1907; past president of the Warren County Medical Society; served as a member of the local school board and of the Warren County library board; on the staffs of the St. Mary's and Cottage hospitals in Galesburg and the Monmouth Hospital in Monmouth, where he died October 27, aged 69, of heart disease.

Burnham C. Dale, Marion, Ind.; Medical College of Indiana, Indianapolis, 1893; member of the American Medical Association; county coroner; member of the board of directors of the Emily Flynn Home for the Aged; died October 26, aged 74, of coronary occlusion.

Francis Peter Daly, Chippewa Falls, Wis.; Rush Medical College, Chicago, 1897; member of the American Medical Association; deputy state health officer; died in Rochester, Minn., October 15, aged 76, of ileocolitis and carcinoma of the colon.

Magnet Jervais Davis, Los Angeles; Cincinnati College of Medicine and Surgery, 1896; died October 25, aged 79, of generalized arteriosclerosis.

Maxwell Dorr, Brooklyn; Long Island College of Medicine, Brooklyn, 1932; member of the American Medical Association; began active duty as a first lieutenant in the medical corps, Army of the United States, in October 1942; service terminated in August 1943; on the courtesy staff of the Israel Zion Hospital; adjunct in the department of gynecology at the Beth Moses Hospital, where he died August 24, aged 36, of malignant hypertension.

Thomas Longley Eland ✙ Letts, Iowa; State University of Iowa College of Medicine, Iowa City, 1907; died in Iowa City October 27, aged 69, of arteriosclerotic heart disease.

Julius Essrig ✙ Mount Vernon, N. Y.; University and Bellevue Hospital Medical College, New York, 1913; past president of the Mount Vernon Medical Society; fellow of the American College of Surgeons; member of the draft board during World Wars I and II; on the staff of the Mount Vernon Hospital; died October 9, aged 55, of hypertensive heart disease.

Eudora Winifred Faxon, Newton, Mass.; Tufts College Medical School, Boston, 1904; served as superintendent of the Woodlawn Sanitarium; died October 13, aged 68.

Dorsey Wayland Fellers, Bloomville, Ohio; Ohio Medical University, Columbus, 1902; served in France during World War I; formerly county health commissioner; on the staff of the Mercy Hospital in Tiffin; bank president; died October 28, aged 71, of cerebral hemorrhage.

Frederick Harrison Ferguson, Elroy, Wis.; Jenner Medical College, Chicago, 1906; served during World War I; died in Bay Pines, Fla., September 18, aged 74.

Henry Sampson Goodman, Cary, Miss.; Medical Department of Tulane University of Louisiana, New Orleans, 1897; member of the American Medical Association; died October 24, aged 69, of coronary heart disease.

Yancey E. Gordon, Bucatunna, Miss.; Kentucky School of Medicine, Louisville, 1890; member of the American Medical Association; also a druggist; died October 16, aged 83, of pneumonia.

Henry Raymond Gross, Chicago; State University of Iowa College of Homeopathic Medicine, Iowa City, 1910; died near Milwaukee September 30, aged 61.

Bertram Johnson, Eureka, Kan.; Jenner Medical College, Chicago, 1908; Hering Medical College, Chicago, 1909; member of the American Medical Association; died September 12, aged 68.

William Craig Judd, West Los Angeles, Calif.; Willamette University Medical Department, Salem, Ore., 1906; died in the Veterans Administration Facility October 23, aged 62, of heart disease and diabetes mellitus.

Orville Kenneth Kaylor ✙ St. Louis; Barnes Medical College, St. Louis, 1903; died October 24, aged 72, of arteriosclerosis.

Logan Guernsey Kimzey ✙ Pullman, Wash.; Washington University School of Medicine, St. Louis, 1910; past president of the Whitman County Medical Society; died September 23, aged 67, of cerebral hemorrhage.

Carl Ross Knoble ✙ Sandusky, Ohio; Starling Medical College, Columbus, 1905; past president of the Erie County Medical Society; formerly county coroner; for many years member and president of the board of education; medical examiner for the Metropolitan Life Insurance Company for many years; on the staffs of the Providence and Good Samaritan hospitals; past president of the Palm Brook Country Club; vice president of the Peoples Loan and Saving Company; died October 24, aged 65, of coronary thrombosis.

John Elias Kumpf ✙ New York; Baltimore University School of Medicine, 1900; died October 9, aged 72.

Charles W. LaRue, Parrottsville, Tenn.; University of Virginia Department of Medicine, Charlottesville, 1893; died in the Takoma Hospital and Sanitarium in Greeneville, October 30, aged 75, of nephritis and pernicious anemia.

Roy Hamilton Long, Monroe, N. C.; Jefferson Medical College of Philadelphia, 1916; specialist certified by the American Board of Psychiatry and Neurology, Inc.; member of the American Psychiatric Association; served in France during World War I; assistant superintendent from 1938 to 1942 and for many years a member of the staff of the State Hospital in Morganton; died October 18, aged 54, of coronary thrombosis.

Melville LeRoy Loomis, Long Beach, Calif.; University of Southern California College of Medicine, Los Angeles, 1900; served on the staff of the Hospital of the Good Samaritan in Los Angeles; surgeon and medical director of the Douglas Aircraft Corporation; died in Santa Barbara October 14, aged 69, of coronary thrombosis.

William Tripner Dowler MacDonnell, Melrose Park, Pa.; Hahnemann Medical College and Hospital of Philadelphia, 1904; served on the staff of St. Luke's Hospital in Philadelphia; died in the Hahnemann Hospital, Philadelphia, October 28, aged 66, of coronary occlusion.

Lorne Mahaffey MacDougall ✙ Brooklyn; M.B. in 1913 and M.D. in 1915, Queen's University Faculty of Medicine, Kingston, Ont., Canada; specialist certified by American Board of Otolaryngology; associate surgeon at the Brooklyn Eye and Ear Hospital; died October 3, aged 65.

Guy Elliott Marcy ✙ Yakima, Wash.; State University of Iowa College of Medicine, Iowa City, 1908; served in France during World War I as a captain with Base Hospital number 50; on the staff of St. Elizabeth's Hospital; surgeon for the Northern Pacific Railway for twenty-five years; died October 24, aged 59, of cerebral hemorrhage.

Frank Eugene Mayberry ✙ Rockland, Mass.; Dartmouth Medical School, Hanover, N. H., 1885; died October 1, aged 85, of diabetes mellitus and heart disease.

Malcolm McKellar ✙ Tulsa, Okla.; Bennett Medical College, Chicago, 1913; member of the American Urological Association; specialist certified by the American Board of Urology, Inc.; medical officer in the medical corps of the U. S. Army during World War I; formerly chief of staff at St. John's Hospital; died October 8, aged 59.

Patrick James McLaughlin, Nashua, N. H.; Baltimore Medical College, 1906; member of the American Medical Association; on the staffs of the St. Joseph's Hospital and the Nashua Memorial Hospital, where he died September 8, aged 67, of acute dilatation of the heart and arteriosclerosis.

Walter Miles ✙ Viola, Ill.; Rush Medical College, Chicago, 1898; died October 29, aged 77, of cerebral thrombosis.

Earl Joseph Morrow, Kansas City, Mo.; Medico-Chirurgical College of Kansas City, 1903; died October 7, aged 66.

Stephen Arthur Oliva, Marcus Hook, Pa.; Hahnemann Medical College and Hospital of Philadelphia, 1932; member of the American Medical Association; began active duty as a first lieutenant in the medical corps, Army of the United States, on Nov. 1, 1942; service terminated Sept. 24, 1943; drowned September 3, aged 39, when he fell from his yacht in Northeast River, Md.

George Byron Parisen, Toledo, Ohio; Western Reserve University Medical Department, Cleveland, 1908; served in the Spanish-American War and World War I; for many years surgeon at the Willys-Overland Motors Company; died October 16, aged 70, of arteriosclerosis and chronic nephritis.

John Porter Pennell ✙ Kokomo, Ind.; Indiana University School of Medicine, Indianapolis, 1935; began active duty as a captain in the medical corps, Army of the United States, on Jan. 5, 1941; relieved of active duty during October 1944; died in a hospital at Columbus, Ohio, October 19, aged 34.

William D. Pennington, Chicago; Hospital College of Medicine, Louisville, Ky., 1894; on the staffs of the Illinois Masonic and Columbus hospitals; died in the American Hospital October 23, aged 88, of cerebral hemorrhage.

William Winston Pettus, Changsha, Hunan, China; Yale University Medical School, New Haven, Conn., 1937; diplomate of the National Board of Medical Examiners; interned at the Presbyterian Hospital in New York, where he served a residency; professor of surgery at the Hunan Yale Medical College; on the staff as teacher at Hsiang-Ya College of Medicine; had been affiliated with the Hunan-Yale Hospital; killed in an airplane accident at Hwangping, Kweichow, China, November 18, aged 33.

William Eugene Ranz ✠ McAllen, Texas; Miami Medical College, Cincinnati, 1899; born in Cincinnati on March 20, 1873; member of the Ohio State Medical Association; past president of the Mahoning County (Ohio) Medical Society; fellow of the American College of Surgeons; for several years a member of the board of education in Youngstown, Ohio, where he was on the staff of the old Mahoning Valley Hospital and St. Elizabeth's Hospital; a captain during World War I; died October 20, aged 72, of coronary occlusion.

Robert Ellsworth Riley ✠ Celina, Ohio; Rush Medical College, Chicago, 1893; also a graduate in pharmacy; on the staffs of the Gibbons Hospital and the Otis Hospital, where he died October 25, aged 82, of cerebral hemorrhage.

Arthur Maurice Rogers, Los Angeles; State University of Iowa College of Medicine, Iowa City, 1895; for twenty years assistant city health officer in charge of the venereal section clinic; died October 21, aged 76, of cirrhosis of the liver.

James Melburn Ruckman ✠ La Rue, Ohio; Starling Medical College, Columbus, 1900; member of the La Rue and Marion County board of education; on the staff of the Marion City Hospital, Marion; died October 25, aged 73, of heart disease.

Levi Albertus Ruhl ✠ Covington, Ohio; Jefferson Medical College of Philadelphia, 1905; died October 19, aged 68, of cerebral hemorrhage.

John G. Seiter, Marion, Ohio; Homeopathic Hospital College, Cleveland, 1881; served as mayor of Marion; died October 23, aged 93, of senility.

John Gill Shimmon ✠ Cleveland; University of Wooster Medical Department, Cleveland, 1912; for many years member and frequently president of the Willoughby village school board and Union High school committee; served as president of the Northeastern Ohio Boy Scout Council; presented the Silver Beaver award in recognition of his valued services to boy scouting; member of the board of trustees of Andrews School for Girls in Willoughby; died in the Lakeside Hospital October 23, aged 61, of perforated duodenal ulcer.

CAPT. JAMES S. KNIPE, M. C., A. U. S., 1918-1945

Clyde Earl Shinkle ✠ Cincinnati; Ohio-Miami Medical College of the University of Cincinnati, 1910; assistant professor of psychiatry at his alma mater, now known as the University of Cincinnati College of Medicine; member of the American Psychiatric Association; at one time assistant superintendent of the Longview State Hospital; on the staffs of the Speer's Memorial Hospital, Dayton, Ky., General, Deaconess and Good Samaritan hospitals; died October 5, aged 60, of bronchiogenic carcinoma.

Robert Simms, Akron, Ohio; Ohio Medical University, Columbus, 1903; died in St. Thomas Hospital October 29, aged 74, of coronary thrombosis and arteriosclerosis.

John Knox Smith, Charleroi, Pa.; Western Pennsylvania Medical College, Pittsburgh, 1888; served as a member of the first school board, for many years president of the board of health and postmaster of Charleroi; died October 8, aged 87.

Oscar H. Stewart ✠ Orleans, Ind.; Pulte Medical College, Cincinnati, 1885; honorary member of the Indiana State Medical Association; died October 19, aged 85, of cardiovascular renal disease.

Thomas Hezekiah Street ✠ Alexander City, Ala.; Jefferson Medical College of Philadelphia, 1900; served as secretary of the Tallapoosa County Medical Society, a member of the city council, member of the state legislature, state senator, city health officer and medical examiner for the Veterans Bureau; a captain in the medical corps of the U. S. Army during World War I; died October 24, aged 69, of coronary occlusion.

Samuel Gaines Stubbins ✠ Birmingham, Ala.; St. Louis College of Physicians and Surgeons, 1907; member of the Southeastern Surgical Association; fellow of the American College of Surgeons; on the staffs of the Hillman Hospital and South Highlands Infirmary; died November 3, aged 65, of coronary thrombosis.

Samuel Henry Sulouff ✠ Jersey City, N. J.; University of Pennsylvania Department of Medicine, Philadelphia, 1900; also a graduate in pharmacy; served as a captain during World War I; for many years held various offices on the board of health; died in the All Souls Hospital, Morristown, November 2, aged 70, of bronchogenic carcinoma.

John S. Suva ✠ Cleveland; John A. Creighton Medical College, Omaha, 1911; member of the Cleveland Academy of Medicine; died in St. Luke's Hospital October 16, aged 64, of injuries received in an automobile accident.

Horace Frederic Tangeman, Cincinnati; Ohio-Miami Medical College of the University of Cincinnati, 1912; member of the American Medical Association and the American Academy of Ophthalmology and Otolaryngology; specialist certified by the American Board of Otolaryngology; served overseas during World War I; on the staffs of the Christ and Good Samaritan hospitals; died in St. Luke's Hospital, Chicago, October 11, aged 57, of coronary occlusion.

Ernest Julius Thierman ✠ Cedar Falls, Iowa; Jefferson Medical College of Philadelphia, 1904; died September 13, aged 70, of cerebral hemorrhage.

Joseph Archibald Vance, Seattle; Eclectic Medical Institute, Cincinnati, 1886; died in a local hospital September 7, aged 86.

Dell Warner Ward, Oelwein, Iowa; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1906; member of the American Medical Association; died September 29, aged 63, of coronary occlusion.

Isabel Monteith Weaver, Kankakee, Ill.; the Hahnemann Medical College and Hospital, Chicago, 1907; on the staff of the Kankakee State Hospital, where she died November 14, aged 64, of heart disease.

John Raymond Wilkinson ✠ Kankakee, Ill.; the Hahnemann Medical College and Hospital, Chicago, 1911; past president of the Kankakee County Medical Society; on the staff of St. Mary's Hospital, where he died November 9, aged 68, of cerebral hemorrhage.

KILLED IN ACTION

James Stuart Knipe, Armstrong, Iowa; State University of Iowa College of Medicine, Iowa City, 1943; interned at the Santa Clara County Hospital in San Jose, Calif.; diplomate of the National Board of Medical Examiners; began active duty as a lieutenant in the medical corps, Army of the United States, on December 29, 1943; in March 1944 received his assignment as battalion surgeon with the 381st Regiment, 96th Division, then stationed at Camp White, Ore.; received amphibious warfare training at San Luis Obispo, San Diego, and Camp Beale, Calif.; embarked for overseas duty from Camp Stoneman at Pittsburg, Calif., in July 1944; promoted to captain in September 1944; after several months' intensive training in Hawaii, participated in the invasion of Leyte Island on Oct. 20, 1944 and in the invasion of Okinawa April 1, 1945; killed in action in Okinawa April 12, aged 26.

Foreign Letters

PARIS

(From Our Regular Correspondent)

Dec. 26, 1945.

Anticancer Center in France

There are in France sixteen anticancer centers, created by private concerns with a certain participation of the public authorities. Of these the Institute of Cancer, the Curie Foundation and the Parisian District Anti-Cancer Center are in Paris. At first these centers dealt only with diagnosis and hospitalization. The Institute of Cancer, under the direction of Professor Roussy, with the Curie Foundation under the direction of Professor Lacassagne, comprises the largest center in the country. It has a laboratory branch for research and a branch for hospitalization; the latter in 1944 dealt with 7,690 patients, with 2,902 new cases; 2,023 were hospitalized. Since 1941 all the centers have dealt with the early diagnosis of cancer. The largest diagnostic centers are in Paris and Nancy; as a rule, 1 person out of 33 examined was found to have cancer. In 1943, as an experiment, Chevalier, director of the National Institute of Hygiene, created a medicosocial department at the Institute of Cancer. Since January 1944 all centers have been endowed with such a department, which, with the help of the district nurses ("assistantes sociales") follows up cancer patients for a five year period.

Difficulty in the development of the centers was due to lack of a regular and secure budget. By order of the former minister for public health these centers have become establishments of public interest and are endowed with a budget by the state. They consist of surgery and radiotherapy wards. Each center must secure the services of a cancer specialist, an otorhinolaryngologist and a pathologist. Each center provides care for a special area; this geographic distribution covers the whole of France.

A unique nomenclature for the types of cancer has been established for all centers. Forms of two types are used in the centers: One form for new patients gives their clinical and therapeutic history, another form is for the supervision of the patients; examinations during the year, relapses, metastasis and other incidents. This last form is sent every year to the National Institute of Hygiene. The center keeps in permanent touch with patients through the district nurse, and the Institute of Hygiene possesses a scientific record. At the beginning of 1945, 7,500 files had already arrived at the institute. In order to obtain more complete documentation, an inquiry is being made on the biologic condition of tumor bearers. The inquiry will be completed when 10,000 files have been received.

Experiment in Social Medicine at the Paris Hospital Clinic

The reform of hospital legislation is, at present, being studied and an experiment is in progress at one of the large Paris hospitals, Beaujon, which had been at the disposal of the United States Army and after being modernized and reequipped was returned to the French administration on Nov. 15, 1945. This hospital is to become a diagnosis and treatment center. It will be open to all social classes. Under the statute of the hospital medical staff, doctors will be under a five year contract. They will be allowed to treat their private patients in the hospital wards, but they must devote a daily minimum of three hours to the service of the public; attendance on outside patients would be, as a principle, prohibited to hospital doctors to avoid the dispersion of their activities and allow these doctors to devote themselves wholly to scientific research and teaching. This hospital clinic will receive large subsidies from the future social security fund. There will be a secretarial department to maintain connection with doctors who send patients to the establishment; they will find in this new organization means of diagnosis and treatment not now available to them. Time will show the results of this experiment.

Hospital Problems

A new medical journal on hospital technics has just been issued under the direction of Henri Thoillier, author of "The French Hospital." It is the first periodical in France to be devoted exclusively to hospital problems. Among the contributors are Professor Justin Besançon, president of the French Red Cross, Professor Debré of the Academy of Medicine, Dr. Hazemann, regional director for public health and assistance, Mrs. Randoin, general secretary of the Society of Alimentary Hygiene, Dr. Rouques, technical adviser to the Ministry of Public Health, other doctors, engineers, architects, managers and administrators of hospitals. The aim of this journal is to foster the collaboration of all persons concerned with hospitals in an attempt to modernize French hospitals. In the first issue there are articles on hospital legislation, medicine, surgery and hospital architecture. It includes two articles by Mrs. Randoin on dietetics and daily equilibrated rations, with menus for institutions. In the same issue Dr. Bridgman sets forth the situation of hospitals in devastated Brittany; in the four departments of this region 4,526 beds were lost and 10,035 still exist. The department of Loire-Inférieure, which in the past was the twenty-ninth on the departmental list of French hospitals, now is the eighty-first; surgery centers are disorganized. The greatest damage occurred in Brest, Lorient, St. Nazaire and St. Malo.

SWEDEN

(From Our Regular Correspondent)

STOCKHOLM, Dec. 14, 1945.

First Postwar Nobel Celebration

This year's Nobel celebration was one of the most splendid and impressive ever held. The memorable event was held December 10 at the Stockholm Concert Hall. After the royal family entered with fanfares, the Nobel prize winners took their places on the platform, this year's winners in the front row and the winners of prizes in previous years behind them. Only five of this year's winners were able to be present: Gabriele Mistral, winner of the prize in literature, Professor Artturi I. Virtanen, winner of the chemistry prize, and the three winners in medicine, Dr. Ernst B. Chain, Sir Alexander Fleming and Sir Howard Florey. The prize winners of previous years, who had been unable to come to Stockholm before, were Johannes V. Jensen, winner of the 1944 prize in literature, Professor Herbert Gasser, who in 1944 received half of the medical award, Professor Leopold Ruzicks, who in 1939 won half of the chemistry award, and Professor Corneille Heymans, 1939 prize winner in medicine.

In addition three Swedes, former prize winners, were present on the platform—Professor Manne Siegbahn, 1944 winner in physics, Professor The Svedberg, 1926 chemistry winner, and Hans von Euler-Chelpin, 1929 winner in chemistry. The Hungarian professor George Hevesy, who received the chemistry award in 1943, also was present. Never before had so many Nobel prize winners been present in Stockholm at one time, and the Swedes outdid themselves both in the decorations of the concert hall and in the festivities that followed the awarding of the prizes by King Gustaf. The following day the king gave a dinner for the prize winners and numerous other guests, after which papers were read by Fleming and Florey in the auditorium of the Karolinska Hospital on the background, development and uses of penicillin.

Penicillin Again Rationed

The Swedish Medical Board has been obliged again to institute rationing of penicillin. During its unrationed period its use was tripled. In September 18,230 ampules were used, in October 24,592 and in November 20,716. At the beginning of December the entire stock consisted of only 21,528 ampules, and the demands of the Swedish hospitals were not entirely filled. To cover the need during January and February, at least 50,000 more ampules are needed. Since the American authorities have announced that the supply to Sweden will be reduced during the coming months, and no other source of supply exists for the Swedes, the situation does not look too promising.

Antipoliomyelitis Serum

Dr. Sven Gard of the state bacteriologic laboratory reports promising preliminary results in the development of an antipoliomyelitis serum. Dr. Gard is chief of the research team which has been carrying on this work at the School of Physics and Chemistry at Uppsala University through a grant from the King Gustaf Jubilee Fund. An additional grant has just been awarded to enable research to continue for another three years. After innumerable general studies of the poliomyelitis virus, research is now concentrated on the development of prophylactic methods of immunity. It is in this field that promising preliminary results have been achieved.

ITALY

(From Our Regular Correspondent)

NAPLES, Dec. 11, 1945.

Control of Bubonic Plague

Eleven cases of bubonic plague were reported in August 1945 in the area of the port of Taranto, where ships from oriental countries were anchored. The patients were immediately isolated. Five patients died. New cases of human contagion did not occur. It is believed that the plague was due to the presence of infected rats. The city was quarantined, and schools and places of public meetings were closed. American sanitarians took an active part in cleaning up the port, which included a campaign against rats. Huge pasteboard rats with antiplague inscriptions were exhibited in public squares in Genoa, Naples, Bari, Palermo and other seashore towns. The inscriptions read "Rats are carriers of plague. Kill them, poison them!" Plague is now entirely under control. The sanitary condition of Naples is normal. The city is not in quarantine and has returned to civil and military activities. One may conjecture that if this epidemic had appeared in 1943 (instead of in 1945, as it did) it would have spread to all European countries. The organic resistance of 450,000,000 European people was very low in 1943. Many families passed several hours of the day and night in subterranean shelters in poor hygienic condition after their homes had been demolished by bombs. The scanty amount of proteins in their food caused an imbalance of albumins and globulins in the blood as well as disorders of the water metabolism, with a consequent rapid loss of weight, urinary disorders and a collective diminution of immunity to infections. If the epidemic had occurred in 1943 it would have been more acute than was influenza after the war of 1914-1918. The epidemic of influenza in 1918 caused six million deaths in Europe. In 1943 sulfanilamide was not available in some European countries. Germany had a large store of drugs early in the war yet was in need of drugs late in its course. A congress of German and Italian immunologists was held in 1942 in celebration of Behring's centennial. The Germans stated that typhus was frequent in Russian soldiers and that German soldiers at the Russian front were using an insecticide substance of the type of DDT which, when dissolved in water and applied to the clothes, killed lice. An article with details of this insecticide substance appeared on pages 232-233 of the *Allgemeine Zeitung* of May 16, 1943. This powder was not provided for the Italian soldiers. During hostilities the Italians used sulfonamide preparations of the types of thiazole and pyridine, by which massive pandemics of pneumococcic diseases were prevented. However, in 1940 the Società Medica Lombarda reported 30 cases of atypical bronchopneumonia caused by pneumococci which were resistant to sulfonamide. The rate of mortality was more than 50 per cent.

American Physicians in Italy

The pattern followed by epidemic foci in Europe was surprising. The epidemics in Italy, like those in France, consisted of salmonellosis due to the paratyphoid bacillus C, smallpox, infectious jaundice and some other infections. Salmonellosis was caused by ingestion of bad meat which was sold through the black market. Smallpox was mild and of the "alastrim" type (which is pandemic in Africa and is very acute in Negroes). In Italy there were many cases, but the mortality rate was low. The appearance of typhus in Italy was exaggerated in some American magazines. The infection in Italy was not caused by Rickettsia prowazeki, as was the infection reported at the Russian and Polish fronts. It is believed that it was caused by Borrelia recurrentis.

Captain Woodward of the United States, a member of the Interallied Committee Against Typhus, now in Naples, recently read a paper on the subject. There was a large audience of American and Italian physicians, among them Colonel Spalding of Detroit, Dr. Anton of Los Angeles and Dr. Schumacher of Illinois. Dr. Woodward spoke on the work of the American Sanitary Committee in Italy. The work carried on in Italy by American authorities in sanitation has resulted in immediate control of epidemics in the country. There were several hundred cases of typhus reported in Naples during January and February 1944. The epidemic was controlled in the course of a few weeks by the work of the American committee, which included administration of the Cox vaccine and disinfection with DDT. The population of Naples in 1944 was more than three million.

BUENOS AIRES

(From Our Regular Correspondent)

Dec. 15, 1945.

Experimental Adrenal Insufficiency During Pregnancy

Dr. Bernardo A. Houssay, the president of the Sociedad Argentina de Biologia, recently read a paper before the society in which he reported that 50 per cent of rats which are adrenalectomized during pregnancy die before parturition. If the animals drink a 1 per cent sodium chloride solution only 14 per cent of the animals die before parturition. The death rate is minimal during the second and third pregnancies after adrenalectomy even if the animals do not receive salt water. At this time the accessory adrenal glands have hypertrophied. The offspring of adrenalectomized rats are small in the first parturition. They are of almost normal size in the second and third parturitions. The number of animals for each parturition is normal. The rats which undergo parturition within ten or fifteen days after adrenalectomy have insufficient milk or none at all. The offspring of these rats die within a few days or grow in a poor nutritional state. The offspring of rats which had adrenalectomy between twenty-five and fifty days before parturition are normal. In relation to control animals, the weight of the adrenals in the offspring of recently adrenalectomized rats is diminished. The injection of adrenotrophine in pregnant rats causes hypertrophy of the adrenals of the pregnant animals but not of the offspring rats. Parturition is difficult for rats treated with the adrenotrophine and the fetuses die. The injection of desoxicorticosterone in pregnant rats prolongs pregnancy, the fetuses are abnormally grown, and parturition is difficult. The injection has no effect on the adrenals of the offspring.

Effect of Alloxan on Langerhans Islands of Rats

Dr. Arturo di Pietro recently reported results of experiments to the Sociedad Argentina de Biologia. Eight rats had intraperitoneal inoculation of alloxan in different doses. The animals were killed at an interval of hours different for each animal for examination of the pancreas and the Langerhans islands. It appears in the literature that, when alloxan is intravenously given, microscopic changes of the pancreas and the Langerhans islands are observable within five minutes to one hour after the injection. The main changes consist of coagulation necrosis of the beta cells of the islands, whereas the alpha cells of the acinous tissue remain well preserved. The same changes are observed twenty-four hours after intraperitoneal injection. Progressive proliferation in the intercalary ducts and the cells of the central portions of the acini starts within seventy-two hours. Atrophy of the islands and degeneration of the beta cells follow. Hyperplasia of the ducts of the islands starts after abatement of the processes of cellular destruction and proliferation, with consequent nodular formation in the ducts and stimulation of the formation of regenerated alpha and beta cells. The former persist in regenerated islands, whereas the latter become necrotic.

Medical Graduates in Colombia

A plan of work to be followed by physicians during the first year after graduation was recently established in Colombia. The aim of this plan is to appoint physicians immediately after graduation to carry on medical work for one year in towns and zones far from the university centers (Bogota, Medellin and Cartagena). In these remote zones and towns the sanitary conditions are unsatisfactory and the number of physicians is small. The physicians will carry on medical work as well as biologic, demographic and epidemiologic studies. The latter will include physical geography, demography, birth rate, death rate, disease rate, general condition of sanitation in the given zone, nutrition, hygiene and economical status of the people, food and kind of salt consumed, social insurance and industrial diseases. The physicians will give with their final report after one year of work in a given zone their own suggestions for improvement of the people and of the living conditions. The physicians appointed will have previously an intensive course on elemental epidemiology and biostatistics. The foregoing plan is already established in Haiti, Mexico and Brazil with satisfactory results.

Experimental Diabetes in Relation to Sex

Dr. Virgilio G. Foglia of Buenos Aires, in a paper read before the Sociedad Argentina de Biologia, described the course of diabetes in subtotal depancreatized rats with loss of 90 or 95 per cent of the whole pancreas. Diabetic hyperglycemia appears in 88 per cent of male rats and in 40 per cent of female animals. The death rate during the first year after subtotal pancreatectomy is higher in the male than in the female. Hyperglycemia in male rats appears early after pancreatectomy and is of long duration. The results of the experiments seem to indicate an antidiabetic role of the ovary.

Brief Items

The Asociación Argentina de Radiólogos was recently organized. Drs. Jose Guardado and Jose P. Uslenghi are the president and secretary, respectively, of the association.

A permanent committee of the pharmacopeia was recently established. The functions of the committee include the study of the Argentine pharmacopeia, biology and pharmacology. The committee will publish a national formulary.

Dr. Bernardo A. Houssay, the head of the Institute of Physiology of the Faculty of Medicine of the University of Buenos Aires, was awarded the 1945 Charles Mickle prize of the University of Toronto.

Dr. Jose Arce of the Faculty of Medicine of the University of Buenos Aires was recently appointed ambassador of Argentina to China.

BRAZIL

(From Our Regular Correspondent)

São Paulo, Dec. 6, 1945.

The Faculty of Hygiene and Public Health of São Paulo

On November 30 the Faculdade de Higiene e Saude Publica of the University of São Paulo was installed under the presidency of Prof. Paul Leitão da Cunha, minister of education and public health. The elevation of the old and well known Instituto de Higiene de São Paulo to the status of a university is one of the most important accomplishments of the government of the state of São Paulo under the supervision of the rector of the University of São Paulo, Professor Jorge Americano.

Among the different courses given in the Escola de Higiene e Saude Publica are public health courses for doctors and teachers, courses for technicians in public health laboratories and courses in dietetics. In July of this year Dr. Fernando Costa signed a decree forming the Institute of Hygiene and the faculty. The following professors constitute his first faculty: Geraldo H. de Paula Souza, Pedro Egidio de Oliveira Carvalho, Lucas de Assunção, Alexandre Wancolle, Francisco Borges Vieira, Francisco Antônio Cardoso, Benjamin Alves Ribeiro, Paulo Cesar de Azevedo Antunes, Rafael de Paula Souza, José Maria Gomes, Alvaro Guimarães Filho, Pedro de Alcântara Marcondes Machado, João Alves Meira, Vicente de Sampaio Lara, João Lane and Rubens Azzi Leal.

Brief Items

The São Paulo Society of the History of Medicine held a special meeting to honor the late Professor João Alves de Lima, whose distinguished services as a surgeon were emphasized by Dr. Sabastião Hermeto Jr. At the same meeting Dr. Flaminio Favero, professor of forensic medicine at the University of São Paulo, read a paper on "The Prohibition of the Use of the Blood among the People of Israel."

Dr. Euryclides J. Zerbini, associate professor of surgery at the University of São Paulo and surgeon of the Santa Casa Hospital, recently returned from the United States, where he spent some time as a guest of Harvard University.

Dr. Angel Roffo, professor at the University of Buenos Aires and director of the Experimental Cancer Institute of that city, spent a few days in São Paulo, where he gave a lecture on "Civilization and Cancer" at the medical center of the university. Dr. Roffo was made a doctor honoris causa by the São Paulo University.

Marriages

Dean Stephen Fleming, Minneapolis, to Miss Elizabeth M. L. Elliott of Thirlestane, Lauder, Scotland, recently.

John Dallas Hallahan, Lansdowne, Pa., to Miss Marion Elizabeth Laskey of Mount Airy, October 30.

A. C. Whittington, Bossier, La., to Miss Jimmie Evans of Farmerville, Texas, October 19.

Stephen Mayka to Miss Mary Jane LaIuppa, both of Rochester, N. Y., December 29.

Daniel Louis Fink to Miss Carroll Louise Shapiro, both of Minneapolis, November 18.

Maurice Nolan Bingham to Miss Virginia Ruth Watson, both of Seattle, October 19.

Robert G. Cook, Toledo, Ohio, to Miss Sarah Louise Sexton of Chillicothe, December 1.

Jack Greenfield, Cleveland, to Miss Janice Elrod of Rutherford, Tenn., January 2.

Harold Rifkin, Brooklyn, to Miss Beatrice Weiss of New York, November 25.

Horace R. Lyons to Mrs. Jeannette Gartz, both of Chicago, January 4.

Correspondence

PHYSICIANS NEEDED FOR MEDICAL MISSIONS

To the Editor:—With the return of large numbers of doctors and nurses from the armed forces—Army, Navy and Air Forces—there must be numbers of men and women ready to launch out in new fields of challenging, often arduous, service.

Lying on my desk today are many calls for doctors and nurses from overseas hospitals in Latin America and Africa, in Asia and the islands of the Pacific. Every sort of person is wanted—physicians, surgeons, medical teachers, research workers, health workers, nurses, expert dentists. So many of our fighting doctors and nurses have seen what Christian missions, both Catho'ic and Protestant, have meant to remote parts of the world that they must feel an urge to take part in the new health outreach. The numberless times our soldiers and sailors were rescued, whether in the islands of the Pacific or China or Africa, from almost certain death, make one realize what the influence of the Christian world mission has been.

The Christian Medical Council for Overseas Work is organized to answer questions that doctors and nurses may wish to ask as to place and conditions of service, as to the type of work involved and as to possibilities for further study and adequate preparation for careers as medical missionaries.

This letter goes out through you and THE JOURNAL to any whose attention may be arrested by our call. This office exists to bring men and women who are eager to serve overseas into touch with the medical and nursing opportunities that are waiting. We shall be glad to write, or to interview, any who will respond.

DOUGLAS N. FORMAN, M.D.
EDWARD H. HUME, M.D.
CHRISTIAN MEDICAL COUNCIL FOR OVERSEAS WORK,
156 Fifth Ave., New York 10.

REVIEW OF BRADFORD AND SPURLING "INTERVERTEBRAL DISC"

To the Editor:—I have just read in the Dec. 15, 1945 issue of THE JOURNAL the review of the book by Drs. F. Keith Bradford and R. Glenn Spurling on the Intervertebral Disc, with Special Reference to Rupture of the Annulus Fibrosus with Herniation of the Nucleus Pulposus. In my opinion this review in its entirety is an unjustified and unscientific attack.

Although the review is not signed, the identity of the reviewer is perfectly evident to any one familiar with the history and literature of intervertebral disk surgery. Those readers not familiar with the history and literature of the intervertebral disk will unfortunately be led to accept it at its face value. The conservative approach of this book to diagnosis and treatment coincides with the opinions of almost all the neurosurgeons and orthopedic surgeons who have had wide experience with this condition and is in sharp contrast to the dogmatic, extravagant and unproved claims made by the reviewer as, for example, that "recent advances have completely transformed the field, both in diagnosis and treatment, to one of accuracy and certainty," as well as his unwarranted opinions regarding "concealed disks" and his dogmatic statements regarding fusion.

R. ARNOLD GRISWOLD, M.D., Louisville, Ky.
Professor and Head of Department of Surgery,
University of Louisville School of Medicine.

(COMMENT.—Books received for review are submitted by the editor to physicians who have done work in the field and who are believed to be competent to express an opinion. Every possible effort is made to avoid the selection of reviewers who might have personal animus. Efforts are also made to avoid the selection of reviewers who would be personally biased in favor of an author. In other words, THE JOURNAL seeks critical reviews, not eulogies or malicious attacks. Reviews are published unsigned because it has been found impossible to obtain objective critical reviews with the signature of the reviewer.—ED.)

TREATMENT OF TETANUS

To the Editor:—These are some personal observations on the treatment of active tetanus. After the fall of Okinawa and the surrender of many Japanese there were many wounded with active tetanus. They all had complete trismus, many with opistotonos, a few in coma.

Our treatment at first consisted in giving tetanus antitoxin intraspinally, intravenously and intramuscularly. The routine consisted of once daily intraspinal and intravenous administrations and a four hour intramuscular sequence. There occurred no change in the clinical state, and after ten days of this treatment without progress we tried the effect of penicillin.

The penicillin was given by once daily intraspinal and intravenous injection of 40,000 units and a four hourly intramuscular injection of 20,000 units. The improvement and eventual recovery following the institution of penicillin therapy was very impressive and warrants further investigation.

HARRY L. MARGULIES, M.D., New York.

BENJAMIN RUSH—FIRST AMERICAN PSYCHIATRIST

To the Editor:—I have read with interest in the December 22 issue of THE JOURNAL the comment on page 1170 on Benjamin Rush, M.D. Benjamin Rush was a great man and he has many admirers. There was one claim to fame which was omitted from this little historical note, however; namely, that Rush was the author of the first systematic work on mental disorders published in this country (Medical Inquiries and Observations upon Diseases of the Mind) in 1812. The portrait of Benjamin Rush adorns the seal of the American Psychiatric Association, since in many ways he is properly looked on as the first American psychiatrist. His statue on the grounds of the old Naval Hospital in Washington bears on one side of the base the inscription "The first American alienist."

WINFRED OVERHOLSER, M.D., Washington, D. C.

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

BOARDS OF MEDICAL EXAMINERS BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Examinations of the boards of medical examiners and boards of examiners in the basic sciences were published in THE JOURNAL, Jan. 26, page 239.

NATIONAL BOARD OF MEDICAL EXAMINERS

NATIONAL BOARD OF MEDICAL EXAMINERS: Parts I and II. Various Centers, Feb. 4-6. Part III. Various Centers, March. Exec. Sec., Mr. E. S. Elwood, 225 S. Fifteenth St., Philadelphia 2.

EXAMINING BOARDS IN SPECIALTIES

AMERICAN BOARD OF DERMATOLOGY & SYPHILOLOGY: *Written. Group B.* April 22. *Oral. Group A and B:* June 6-8. Final date for filing application is March 1. Sec., Dr. George M. Lewis, 66 E. 66th St., New York 21.

AMERICAN BOARD OF INTERNAL MEDICINE: *Oral.* Philadelphia, May 9-11. Final date for filing application is March 15. San Francisco, June 27-29. Final date for filing application is April 15. Asst. Sec., Dr. W. A. Werrell, 1 W. Main St., Madison 3, Wis.

AMERICAN BOARD OF OPHTHALMOLOGY: Chicago, Oct. 9-12. Sec., Dr. S. Judd Beach, 56 Ivie Rd., Cape Cottage, Me.

AMERICAN BOARD OF OTOLARYNGOLOGY: Chicago, May 22-25. Sec., Dr. Dean M. Lierle, University Hospital, Iowa City, Ia.

AMERICAN BOARD OF PATHOLOGY: Chicago, March 5-6. Final date for filing application is Feb. 10. Sec., Dr. F. W. Hartman, Henry Ford Hospital, Detroit.

AMERICAN BOARD OF PSYCHIATRY & NEUROLOGY: Chicago, May 24-25. Final date for filing application is February 1946. Sec., Dr. Walter Freeman, 1028 Connecticut Ave., N. W., Washington 6, D. C.

AMERICAN BOARD OF UROLOGY: *Oral.* Chicago, February 1947. Final date for filing application is Nov. 15. Sec., Dr. Gilbert J. Thomas, 1409 Willow St., Minneapolis 4.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Cosmetology: Loss of Hair Resulting from Negligence of Beauty Operator.—This is an action to recover damages for personal injuries alleged to have resulted from the negligent acts of a beauty operator employed by the defendant. From a verdict in favor of the plaintiff and an order denying the defendant's motion for a directed verdict in his favor, the defendant appealed to the Supreme Judicial Court of Massachusetts.

The defendant was the proprietor of the Kilby Beauty Shop, of which the plaintiff had been a customer for over nine years, and on March 13, 1943 the plaintiff went to the shop by appointment to have her hair dressed by a "heat wave" with the electrical appliance that had been used on other occasions in performing such a service for her. When she arrived, a beauty operator in the employ of the defendant informed her that they had a new "no heat cold wave" which she recommended the plaintiff try. The plaintiff replied that she would prefer the "heat wave" but after some discussion consented to the use of this newer and more expensive method. It appeared from the evidence that the previous February the operator had attended a demonstration of the cold wave process at the place of business in Boston of the distributor of the preparation which was later used on the plaintiff's hair and that an order for the preparation was placed with the distributor. When the order was filled it was found to consist of four different solutions, one for fine hair, one for coarse hair, one for medium hair and one for overbleached hair. After obtaining the plaintiff's consent, the operator arranged her hair, which was abundant and of fine texture, on different spools and applied a liquid substance by patting it on the hair. During this process the plaintiff informed the operator that her head felt "numb and cold," but the operator replied that "that was the general result of the preparation." The operator later admitted, however, that this was the first time she had used the preparation. The process took about three hours and at its conclusion the operator held up her hands and said that "her hands were all split from the acid that was used and she had to go out and tape her fingers one at a time." About five days after the treatment had been given, the plaintiff ran her hand through her hair and "it came right out by the roots, in bunches." She returned to the shop and asked the operator whether or not the defendant had been informed of the circumstances. The operator replied that he had. Defendant then came into the shop and in his presence the operator stated "We used the wrong solution. . . . We had three solutions and we used the wrong one on your hair." The defendant replied "All right, we will give you some Breck shampoos" and "it will take care of it." The plaintiff then received a Breck shampoo, in the process of which her hair came out in "good sized bunches" so the "top of her head was perfectly bald." No charge was made for this shampoo. The plaintiff's hair kept falling out for five or six weeks and the bald spots on her scalp existed for about a year. In April following this treatment the plaintiff consulted a physician, who administered "lamp treatments" at different periods up to September, and new hairs were then just commencing to come in on the top of the plaintiff's head. Following the plaintiff's treatment, the operator called at the office of the distributor from whom the preparation had been received and as a result a representative called on her and told her not to use any more of the solution for fine texture hair. She used none thereafter.

The court said that the defendant was bound to exercise the ordinary skill and ability of persons engaged in the hair dressing business in Boston. On all the evidence, continued the court, the jury could properly have found that the preparation used by the operator had not been used by her before but that, when warned by the plaintiff that her head felt numb and cold, the operator nevertheless stated that that was the general result of the preparation; that on the conclusion of the work the operator's hands were split and bleeding as a result of the "acid" in the preparation; that in the presence of the defendant, who did not demur, the operator subsequently admitted that she had used the wrong solution. Furthermore, said the court, the jury could properly have found that the negligence of the defendant in the use of the wrong and harmful solution was the cause of the plaintiff's injuries. The jury findings being sustained by the evidence, the defendant's exceptions were accordingly overruled, and, in effect, the plaintiff's verdict affirmed.—*Cowhig v. Cafarelli, 63 N. E. (2d) 347 (Mass., 1945).*

Privileged Communications: What Action of the Patient Constitutes Waiver of Privilege.—The plaintiff sued to recover damages for injuries sustained when he fell through a trap door in the public sidewalk adjacent to the defendant's store. The defendant used this trap door for the purpose of receiving merchandise into its store basement. From a verdict and judgment in favor of the plaintiff, the defendant appealed to the Supreme Court of Utah.

The evidence showed that the opening in the sidewalk was in the shadow of an awning maintained by the defendant to shade its store windows, and that the plaintiff had impaired eyesight, but that he could have seen the trap door if he "had looked right down." Whether he used the requisite degree of care for his own safety was a jury question which was resolved in favor of the plaintiff. In asking for a reversal, the defendant contended, among other grounds, that the trial court erred in its ruling on the admissibility of the testimony of two physicians. It appeared from the evidence that a Dr. Dumke had attended the plaintiff when he was first taken to the hospital after the accident and that another physician, Dr. West, had taken various x-ray pictures of the plaintiff's back and skull. These pictures were taken at the request of Dr. Dumke to assist in his treatment of the plaintiff. At the trial the defendant attempted to prove by these two doctors that the x-ray pictures did not show any injury to the bone in the plaintiff's back but disclosed a pronounced arthritic condition which could not have developed as a result of this injury. On objection of the plaintiff, the proffered proof was rejected.

Section 104-49-3 (4), U. C. A. 1943, provides:

> A physician or surgeon cannot, without the consent of his patient, be examined, in a civil action, as to any information acquired in attending the patient which was necessary to enable him to prescribe or act for the patient.

The defendant did not contend that this section was inapplicable, but it did contend that the plaintiff, by testifying concerning the nature and extent of his injuries, waived the privilege provided for by the statute.

We have consistently held, said the court, that the privilege given by section 104-49-3 (4) is personal to the patient and may be waived. In this case, however, the plaintiff did not testify concerning anything which either Dr. Dumke or Dr. West told him nor did he give details concerning the mode of treatment. The plaintiff did not by his own testimony, therefore, waive the privilege. Furthermore, the use by the plaintiff of Dr. Kerr, another physician, as a witness on his behalf did not constitute a waiver. Dr. Kerr was subject to cross examination by the defendant. The x-ray pictures which he testified that he took and which he identified for the court were admitted in evidence. Dr. Dumke and Dr. West were both permitted to see these pictures and to testify in full as to what the pictures disclosed. The court therefore held that while a patient cannot testify concerning what was said and done by his physician in the treatment of the injuries which are subject to the litigation and then close the physician's mouth by claiming privilege, no such effort was made by the plaintiff in this case, and it therefore held that there was no error in refusing to admit the proffered testimony of Drs. Dumke and West. Judgment for the plaintiff was accordingly affirmed.—*Clawson v. Walgreen Drug Company, 162 P. (2d) 759 (Utah, 1945).*

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1936 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

Am. J. Roentgenol. & Rad. Therapy, Springfield, Ill.

54:329-436 (Oct.) 1945

Differential Diagnosis of Tuberculosis in Joints of Extremities. R. W. Lewis.—p. 329.

Internal Derangements of Knee Joint: Diagnostic Scope of Soft Tissue Roentgen Examinations and Vacuum Technic Demonstration of Meniscl. J. Gershon-Cohen.—p. 338.

Post-Traumatic Para-Articular Calcifications and Ossifications of Ankle. A. D. Piatt.—p. 348.

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Notes on Use of Protective Glass in Photofluorographic Equipment. R. H. Morgan and I. Lewis.—p. 403.

American Journal of Tropical Medicine, Baltimore

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Difficulties Arising in Experimental Propagation of Falciparum Malaria. M. F. Boyd.—p. 293.

*Employment of Quinacrine Hydrochloride in Prevention of Malaria Infections. M. F. Boyd and S. F. Kitchen.—p. 307.

*Observations on Transmissibility of Strains of Plasmodium Vivax from Pacific War Areas by Anopheles Quadrimaculatus. R. B. Watson. —p. 315.

Malaria in Amazon Valley of Brazil During 1942 and 1943. O. R. Causey and G. B. Mello.—p. 323.

Persistence of Yellow Fever Virus in Mosquitoes After Death of Insect. Mary B. Waddell.—p. 329.

Effect of Prolonged Storage of Sera on Yellow Fever Protection Tests. J. C. Bugher.—p. 333.

Relapsing Fever in Denton County, Texas: Report on Finding the Tick Ornithodorus Turicata Naturally Infected. C. L. Wisseman Jr. —p. 339.

Early Results of Treatment of African Trypanosomiasis with Two New Arsenical Preparations (Melarsen Oxide and 70A): Preliminary Report. D. Weinman and K. Franz.—p. 343.

Inquiry into Growth Factor or Factors of Certain Blood and Tissue Flagellates. H. A. Senekjie and Ruth A. Lewis.—p. 345.

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Clinical Cure of Madura Foot. J. T. Peters.—p. 363.

Acid-Ether Centrifugation and Zinc Sulfate Flotation Technics as Methods for Recovery of Eggs of Schistosoma Mansoni. T. H. Weller and G. J. Dammin, with technical assistance of Katherine Patterson and E. L. Harwood.—p. 367.

Comparative Studies on Enterozoic Parasite Ova and Cyst Concentrating Procedures. R. L. Brown.—p. 375.

Quinacrine Hydrochloride in Malaria Prevention.—Boyd and Kitchen record experiments performed to ascertain the degree of protection against malaria afforded by various dosages of quinacrine hydrochloride (atabrine) when administered to patients inoculated with one or more species of malaria parasites at varying levels of inoculation intensity. Plasmodium vivax and Plasmodium falciparum react differently when inoculated into white patients routinely receiving quinacrine. The administration of 0.1 Gm. six days a week continued during the period of exposure has afforded complete protection against the falciparum infection but has not protected against a vivax infection. Even materially lower dosages appear in some instances to have protected against the falciparum infection and in the instances in which the infection became patent appear to have exerted a therapeutic effect before the onset of clinical activity. When the period of administration closely coincides with the time of exposure, doses of 0.1 Gm. a day for six days a week are inadequate to protect against a vivax infection. Even when the period over which these doses are given is extended to at least two weeks before and two weeks subsequent to the time of exposure, vivax infections later become clinically active, although exhibiting a more extended incubation period. Since vivax infections may, even without suppressive therapy, sometimes present protracted incubation periods approaching a year in duration, it is likely that a high proportion of persons who have received suppressive therapy will also finally experience clinically active vivax malaria after protracted incubation periods.

Transmissibility of Strains of Plasmodium Vivax.—From soldiers who had presumably acquired their infections in Pacific war areas, six strains of Plasmodium vivax were isolated by transfer of blood to patients who were candidates for malaria therapy. The clinical and parasitologic characteristics of the induced infections were not unlike those of infections with the McCoy strain of P. vivax, the strain of reference used throughout the study. Some of the patients with known or probable histories of former vivax infections demonstrated considerable immunity to the Pacific strain infections, 4 patients being refractory. When gametocytemia of these induced infections seemed to favor mosquito infection, Anopheles quadrimaculatus mosquitoes were fed. Subsequent to a minimum incubation period of seventeen days, these mosquitoes were examined for sporozoites. Salivary gland infections were demonstrated in mosquitoes fed on patients with infections with three of the six strains. Sporozoite transmission of these three strains was accomplished. At least some of the vivax strains from the Pacific war area are capable of being transmitted by A. quadrimaculatus.

Archives of Dermatology and Syphilology, Chicago

52:147-220 (Sept.) 1945

*Intensive Arsenotherapy of Early Syphilis. L. W. Shaffer.—p. 147.

Intensive Treatment of Early Syphilis with Oxophenarsine Hydrochloride by Multiple Injections. E. J. Trow and H. A. Dixon. —p. 155.

Onychomycosis and Dermatomycosis Caused by Trichophyton Rubrum and Aspergillus Nidulans. E. S. Bereston and W. S. Waring.—p. 162.

*Undecylenic Acid in Treatment of Dermatomycosis. A. L. Shapiro and S. Rothman.—p. 166.

Polycythemia with Unusual Eruption. A. Strickler.—p. 172.

Creeping Eruption: Results of Treatment with Fuadin. F. A. Dolce and J. E. Franklin.—p. 174.

Xeroderma Pigmentosum: Additional Notes on 6 Cases of Dr. Mayrand and Dr. Gaumond. Madge T. Macklin.—p. 176.

Treatment of Ichthyosis. H. H. Gordon.—p. 178.

Colloid Degeneration of Skin (Colloid Milium): Report of Case, with Observations on Ascorbic Acid Therapy. S. S. Robinson and S. Tasker.—p. 180.

Arsenotherapy of Early Syphilis.—A group of 210 patients with early primary syphilis were given three injections of oxophenarsine hydrochloride weekly for a total of twenty injections (six and two-thirds weeks). A single dose varied from 0.05 to 0.07 Gm., depending on weight. This course was followed by eight injections of bismuth salicylate 0.2 Gm. given twice weekly for four weeks. This course was immediately followed by ten arsenical treatments given twice weekly for five weeks. Only 63 of the 210 patients completed the treatment with satisfactory regularity and remained under observation for at least six months. Fifty-six of these (89 per cent) proved negative clinically and serologically, and 5 patients (8 per cent) proved seroresistant; there was clinical relapse in 2 (3 per cent) and serologic relapse in none. A total of 352 patients with syphilis were given three injections of oxophenarsine hydrochloride and one injection of bismuth subsalicylate weekly for eight weeks according to the Eagle plan. Only 109 patients completed the treatment in a satisfactory manner and have been followed for six to seventeen months. Thirty-three of the 109 were patients with early primary syphilis. It is desirable in appraising results to classify the types of early syphilis. Prognosis depends on the duration of the disease. Six of the 33 patients were classified as seronegative, and all proved negative clinically and serologically. Of 27 classified seropositive 23

(85.2 per cent) proved negative clinically and serologically. One seropositive patient (3.7 per cent) proved seroresistant, and 3 seropositive patients (11.1 per cent) were considered questionable. Failures have not occurred with any type of intensive therapy used for any patient with seronegative primary syphilis.

Undecylenic Acid in Dermatomycosis.—A new fungicidal preparation containing 20 per cent zinc undecylenate and 5 per cent undecylenic acid in a vanishing emulsion base (p_H 6.5) was tested clinically by Shapiro and Rothman in 150 patients with dermatomycosis presenting positive microscopic and/or cultural evidence of fungi. The pathogenic fungi grown on culture in this group were identified as Tricophyton gypseum, Tricophyton purpureum, Epidermophyton inguinale and Monilia. Complete clinical cure could be achieved with the undecylenate preparation within four weeks for the great majority of patients (86 per cent) with dermatomycosis pedis, regardless of the causative fungi. Relapses did not occur if treatment was continued. Comparative experiments have shown that the new preparation is only slightly superior to sulfur-salicylic acid preparations, but the undecylenate ointment is less irritating than any other preparation of similar fungicidal strength. Treatment with undecylenate ointment of patients with extended vesiculation, erosions, rhagades and edema of the feet can be employed without danger of irritation. In treatment of tinea cruris and tinea axillaris complete clinical cure was readily accomplished with the undecylenate preparation, regardless of the causative agent. In this group complete absence of any irritating action was noted as particularly important because of the pronounced irritability of large flexor surfaces. Results against tinea circinata so far are not entirely satisfactory. Infection of the glabrous skin with Microsporon audouini in adults and children responded well. In addition, 3 of 11 patients with tinea capitis caused by M. audouini were cured by the undecylenate ointment, so that x-ray epilation was not necessary. The results were not encouraging in onychomycosis.

Bull. of the U. S. Army Med. Dept., Washington, D. C.

4:491-612 (Nov.) 1945

Psychosomatic Medicine on General Medical Wards. W. C. Menninger. —p. 545.
Tropical Psychiatry. P. D. MacLean, M. Moore and D. Crocker. —p. 551.
Eye and Ear Sequelae of Scrub Typhus Fever. L. R. Dame.—p. 554.
Management of Suprapubic Cystostomy. J. H. Semans.—p. 560.
Early Treatment of Extremity Wounds. H. A. Sofield.—p. 562.
Ear Molds for Hearing Aid Appliances. G. A. McCracken.—p. 567.
Water Supply at a Base Unit in China. C. Bovée, J. J. Sachs and J. B. Montgomery.—p. 571.
*Epidemic of Acute Pharyngitis Due to Hemolytic Streptococci. J. T. Pewters and L. T. Bullock.—p. 579.
Venereal Disease Control Interview. E. C. Van Horn and O. L. Sawey. —p. 582.
Reconditioning Program in an Overseas General Hospital. P. Kunkel. —p. 586.

Epidemic Pharyngitis Due to Hemolytic Streptococci.—Pewters and Bullock report an epidemic of acute pharyngitis and tonsillitis which occurred at an army air field. One hundred and fourteen cases were admitted to the station hospital during an eight day period. The onset was rapid, starting with sore throat, fever and malaise. The severe sore throat was accompanied by dysphagia and severe prostration in many cases. The temperature was usually between 101 and 103 F. and ranged between 100 and 105 F. Dusky red edema of the tonsils, uvula and pharynx and small yellow spots of exudate on the tonsils or pharyngeal wall were present. The submaxillary lymph nodes were usually enlarged and tender. The fever subsided by lysis in two or three days, and the sore throat gradually improved. Throat cultures were taken from 66 patients. About one half of these were taken after varying amounts of sulfadiazine had been administered. Fifty-five of the cultures were positive for group A hemolytic streptococci. All patients were treated with bed rest, forced fluids and sulfadiazine. Sulfadiazine 2.5 Gm. was given initially, followed by 1 Gm. every four hours. Sedatives were used as needed to control pain and dysphagia. Recovery was rapid. Three patients developed mild injection of the eardrum, which subsided without drainage or disturbance in hearing. All patients were examined weekly for six weeks. After three months rheumatic fever or nephritis had not developed in any patient.

Connecticut State Medical Journal, Hartford

9:755-824 (Oct.) 1945

Hospitals and Doctors Review Blue Cross Plans (Hospital Service Insurance). L. H. Garland.—p. 757.
Restoring Industrially Injured. S. L. Hanson.—p. 759.
Nutritional Edema. A. O. Wilensky.—p. 761.
Grip Syndrome. D. J. Knowlton.—p. 763.
Diagnosis and Treatment of Uterine and Pelvic Endometriosis. A. H. Morse.—p. 768.
Case of Incarcerated Uterus Successfully Treated in 1808. H. Thoms. —p. 771.

9:825-910 (Nov.) 1945

Address of Major General Paul R. Hawley.—p. 827.
Medical Care of Naval Veteran. H. H. Montgomery.—p. 831.
Psychiatric Aspects of Veterans' Reemployment. C. C. Burlingame. —p. 836.
Tuberculosis as an Aftermath of the War. P. S. Phelps.—p. 839.
Cardiovascular Syphilis: Approach to Early Clinical Recognition and Early Treatment. M. Dressler.—p. 844.
Relation of Fluorine to Dental Caries. C. J. Robbins.—p. 855.
Malaria and the Returning Serviceman. M. Tager.—p. 858.

Epidemiol. Information Bulletin, Washington, D. C.

1:759-800 (Oct. 31) 1945

Epidemic Diseases in Japan. K. Stowman.—p. 759.
Reduction of Infectious Diseases at Manila.—p. 765.
Current Reports on the Prevalence of Certain Diseases.—p. 767.

Georgia Medical Association Journal, Atlanta

34:171-190 (Sept.) 1945

Multiple and Solitary Renal Cysts: Clinical and Pathologic Aspects. S. J. Sinkoe.—p. 171.

34:191-212 (Oct.) 1945

How Good is Navy Medical Care in World War II? J. C. Norris. —p. 191.
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Early Congenital Syphilis: Diagnostic Criteria and Penicillin Therapy. E. R. Watson.—p. 200.

Journal of Bacteriology, Baltimore

50:131-240 (Aug.) 1945

Burst Size Distribution in Growth of Bacterial Viruses (Bacteriophages). M. Delbrück.—p. 131.
Effects of Specific Antisera on Growth of Bacterial Viruses (Bacteriophages). M. Delbrück.—p. 137.
Interference Between Bacterial Viruses: III. Mutual Exclusion Effect and Depressor Effect. M. Delbrück.—p. 151.
Observations of Hemolytic Escherichia Coli on Blood Agar and Eosin Methylene Blue Agar. W. L. Loving.—p. 171.
Further Studies on Effects of Spleen Extract on Bacteria. L. G. Nutini, C. W. Kreke and M. P. Schroeder.—p. 177.
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Significance of Sodium Chloride in Studies of Staphylococci. G. H. Chapman.—p. 201.
Effect of Penicillin on Infection of Guinea Pigs with Corynebacterium Diphtheriae. R. M. Young and G. M. Mool.—p. 205.
Occurrence of Bacillus Botulinus Types A and B in Accidental Wounds. I. C. Hall.—p. 213.
Transformation of Streptococcus Lactis R Factor to "Folic Acid" by Resting Cell Suspensions of Enterococci. J. L. Stokes and Alma Larsen.—p. 219.
*Human Food Poisoning Due to Growth of Clostridium Perfringens (C. Welchii) in Freshly Cooked Chicken: Preliminary Note. L. S. McClung.—p. 229.

Food Poisoning Due to Clostridium Perfringens.—The majority of the cases which have come to McClung's attention resulted from food eaten in a large public cafeteria. The symptoms included nausea, occasionally vomiting, intestinal cramps and severe diarrhea. In the majority of cases the symptoms began eight to twelve hours after the meal, with the diarrhea continuing for about twelve hours. Symptoms developed after eating chicken which was cooked one day and served on the following day. The chickens were cooked by steam under low pressure for three hours; they were then removed from the broth, which was saved for later use, and boned. Creamed chicken, croquettes prepared from the precooked chicken and similar dishes have been implicated and confirmed by bacteriologic evidence. The spoilage could be detected in many cases by the appearance of gas bubbles in liquid or semiliquid samples. In all samples of broth, but not necessarily with samples like croquettes, gram stains revealed heavy contamination with gram-positive rod forms which gave cultural and other reactions of

Clostridium perfringens. It seems reasonable to suppose that C. perfringens may be involved in the toxic spoilage of foods other than chicken and may have been overlooked. It is suggested that in the future those who are investigating outbreaks include the inoculation of suitable anaerobic mediums. In view of the ubiquitous distribution of the organism, its mere demonstration in a food may not necessarily mean that the food was contaminated sufficiently for this species to be the offending organism.

Journal of Bone and Joint Surgery, Boston

27:547-784 (Oct.) 1945. **Partial Index**

*Surgical Obliteration of Bone Cavities Following Traumatic Osteomyelitis. M. P. Knight and G. O. Wood.—p. 547.
Treatment of Benign Giant Cell Tumor in Lower Third of Femur by Curettage and "Telescoping" Fragments of Bone. R. W. Johnson Jr. and J. Lyford.—p. 557.
*Local Chemotherapy with Primary Closure of Septic Wounds by Means of Drainage and Irrigation Cannulae. M. N. Smith-Petersen, Carroll B. Larson and W. Cochran.—p. 562.
Congenital Absence of Radius: Method of Surgical Correction. D. E. Starr.—p. 572.
Brittain Ischiofemoral Arthrodesis. R. A. Knight and M. M. Bluhm. —p. 578.
Aseptic Necrosis of Astragalus Following Arthrodesing Procedures of Tarsus. F. M. Marek and A. J. Schein.—p. 587.
Difficult Fractures of Neck of Femur Treated with Stud Bolt Screw: Simplification of Technic. F. E. Godoy-Moreira.—p. 595.
Selection of Cases for Arthrotomy of Knee in an Overseas General Hospital: Two Year Follow-Up Study. E. F. Cave, C. R. Rowe and L. B. K. Yee.—p. 603.
Anterior Transposition of Peroneal Nerve for Traction Paralysis. H. Milch.—p. 608.
Acute Ischemia of Anterior Tibial Muscle and Long Extensor Muscles of Toes. C. E. Horn.—p. 615.
Severe War Injuries of Elbow. S. T. Snedecor and W. C. Graham. —p. 623.
Dual Plates for Internal Fixation in Nonunion of Fractures. J. A. Key. —p. 632.
Treatment of Ununited Fractures of Long Bones: Method Combining Grafting and Internal Fixation. T. Horwitz and R. G. Lambert. —p. 637.
Restoration of Muscle Power by Heavy Resistance Exercises. T. L. DeLorme.—p. 645.
Polymorphous Cell Sarcoma, Malignant Phase of Giant Follicle Lymphoma, with Generalized Skeletal Involvement and Multiple Pathologic Fractures: Report of Case. W. E. Kenney.—p. 668.
Spontaneous Bilateral Fracture of Neck of Femur Following Irradiation. C. H. Heyman.—p. 674.
Dislocation of Cervical Spine Treated by Open Reduction. R. J. B. McEwen and J. G. Bickerton.—p. 679.
Sagittal Cleft (Butterfly) Vertebra. F. J. Fischer and R. E. Vandemark.—p. 695.
Gunshot Wound with Osteomyelitic Destruction of Body of Third Cervical Vertebra. C. U. Hauser and D. J. Reagan.—p. 699.
Intra-Articular Osteochondral Fractures as Cause for Internal Derangement of Knee in Adolescents. P. H. Harmon.—p. 703.

Obliteration of Bone Cavities Following Traumatic Osteomyelitis.—Knight and Wood point out that one of the most serious reconstruction problems in war casualties is the treatment of bone cavities associated with loss of skin and soft tissue following infected compound fractures. Especially difficult are large bone defects in the tibia and the femur in the vicinity of the knee. The authors have adopted a procedure which expedites healing and obliterates these cavities in the long bones of the extremities. Their method consists of three stages: (1) adequate sequestrectomy, (2) application of split skin grafts and (3) excision of the initial skin graft, application of bone chips and transfer of a full thickness skin graft. Of 23 cases treated in this manner the wounds in all but 2 have entirely healed. Bone sepsis has been eradicated in all cases and the defects have been eliminated. There has been no sequestration of any of the chips and no roentgenographic evidence of osteomyelitis following the insertion of the bone chips. In the 2 cases in which healing is not complete the bone defects have been eliminated and bony union is solid, but the soft tissue healing is not sound because of error in the skin graft technic, resulting in inadequate blood supply. Careful planning of the full thickness skin grafting will ensure sound healing.

Chemotherapy with Primary Closure of Septic Wounds.—After incision and drainage of an osteomyelitis area, two glass cannulas are inserted, and the wound is closed tightly around them. Rubber tubes are connected to the cannulas, one leading to a bottle of irrigating fluid at the head of the bed, the other to a waste bottle on the floor. At regular intervals irrigation fluid is allowed to flow through the wound until it comes out clear; the rubber tube from the outlet cannula is then clamped off, allowing the irrigation fluid to accumulate in the wound before the rubber tube from the supply bottle is clamped off. Later vitallium cannulas were substituted. Diluted solution of sodium hypochlorite has been used extensively and is often substituted temporarily for other chemotherapeutic agents. Silver pectinate solution has been used in a limited number of cases as a local chemotherapeutic agent but not as an irrigation fluid. Penicillin has been used for the last year. The system of two drainage and irrigation cannulas has been found to be a practical way of introducing the penicillin locally. Smith-Petersen and his associates, after eleven years with local chemotherapy administered through a closed system of cannulas, call attention to several favorable aspects: The almost complete primary closure reduces to a minimum the loss of serum from the granulating surfaces. The infrequency of dressings appeals to the patient and to the surgeon. The time for complete healing of the wound is materially shortened. The scar is linear and level. The postoperative clinical course in the majority of cases treated by this method has been smooth; the temperature chart levels off quickly; the patients are happy and look well. It is not a method with 100 per cent cures. There have been cases with local recurrence of sepsis, but these have been relatively few.

Journal of Experimental Medicine, New York

82:227-296 (Oct.) 1945

Metabolism of Kidney in Experimental Renal Hypertension: II. Concentration of Cytochrome c and Activities of Cytochrome Oxidase and of Succinic Dehydrogenase Systems in Kidney of Dogs with Experimental Renal Hypertension. Inhibitory Effect of Renin and of Kidney Tissue Preparations from Hypertensive Dogs on Respiratory Enzymes. S. B. Raska.—p. 227.
Hereditary Achondroplasia in Rabbit: I. Physical Appearance and General Features. W. H. Brown and Louise Pearce.—p. 241.
Id.: II. Pathologic Aspects. Louise Pearce and W. H. Brown.—p. 261.
Id.: III. Genetic Aspects: General Considerations. Louise Pearce and W. H. Brown.—p. 281.

Journal of Nutrition, Philadelphia

30:225-300 (Oct.) 1945

Physiologic Availability of Vitamins: V. Effect of Copper on Extra Dietary Ascorbic Acid. M. Hochberg, D. Melnick and B. L. Oser. —p. 225.
Id.: VI. Effect of Adsorbents on Thiamine. D. Melnick, M. Hochberg and B. L. Oser.—p. 233.
Effect of Soybean Phosphatides on Vitamin A. Metabolism. C. A. Slanetz and A. Scharf.—p. 239.
Nutritive Value of Distillers' Dried Solubles as Source of Protein. C. W. Hughes and S. M. Hauge.—p. 245.
Calcium Metabolism of Preschool Children. Ellen K. Watson, Elinor W. McGuire, Frieda L. Meyer and Milicent L. Hathaway.—p. 259.
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Effects of Light, Trauma, Riboflavin and Ariboflavinosis on Production of Corneal Vascularity and on Healing of Corneal Lesions. O. H. Lowry and O. A. Bessey.—p. 285.
Comparative Effectiveness of Various Iron Compounds in Promoting Iron Retention and Hemoglobin Regeneration by Anemic Rats. S. Freeman and Marie W. Burrill.—p. 293.

New England Journal of Medicine, Boston

233:427-452 (Oct. 11) 1945

The Greeks Had a Word for It. A. Williams.—p. 427.
Influence of Pregnancy on Otosclerosis. R. T. Barton.—p. 433.
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Acute Hemorrhagic Pancreatitis with Widespread Fat Necrosis.—p. 443.
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233:453-484 (Oct. 18) 1945

*Rehabilitation of Patients Totally Paralyzed Below the Waist, with Special Reference to Making Them Ambulatory and Capable of Earning Their Living: I. Anterior Rhizotomy for Spastic Paraplegia. D. Munro.—p. 453.
*Cobra Venom in Treatment of Angina Pectoris. A. S. Freedberg and J. E. F. Riseman.—p. 462.
Tuberculosis. J. D. Wassersug.—p. 467.
Chronic Ulcerative Colitis. Adenocarcinoma of Hepatic Flexure.—p. 475.
Chronic Ulcerative Colitis and Ileitis; Adenocarcinoma of Colon.—p. 477.

Rehabilitation of Patients Paralyzed Below Waist.—Munro asserts that a patient with a spinal cord or cauda equina injury who is intelligent and cooperative and has the use of the shoulder, arm and hand muscles can be made ambulatory, can

have such control of the bladder and bowels as to sleep through the night without either getting up or wetting himself, can carry out ordinary activities throughout the day without soiling himself with feces or having to evacuate his bladder oftener than once every three hours, can lead a normal social life and can earn a living. This paper is the first of a series that describes certain therapeutic procedures that have made the attainment of these end results possible. The author has performed a bilateral dorsolumbar anterior rhizotomy on 10 patients. This bilateral intraspinal division of the anterior roots of the eleventh thoracic through the first sacral spinal nerve is recommended as a means of changing a spastic to a flaccid paraplegia in patients with an anatomic transection of the spinal cord at any point between the second thoracic and the second sacral segment preliminary to making the patients ambulant and to providing them with complete twenty-four hour control of micturition so that they may again become active members of their community and be self supporting. Because this operation is a permanently destructive one, the indications for performing it should never be considered lightly. For the present, at least, it should be strictly limited to patients in whom the spinal cord is anatomically transected and in whom all neural connections between the cut surfaces of the cord have been destroyed.

Cobra Venom in Angina Pectoris.—Freedberg and Riseman studied 12 patients with angina pectoris of coronary arteriosclerotic origin for various lengths of time. During the period of observation the frequency of the attacks in daily life became well known. The amount of work that could be performed under standardized conditions before pain developed had been determined on many occasions. The administration of cobra venom to patients resulted in an increase in the standardized exercise tolerance and in clinical improvement in 7 of the 12 patients studied. This occurred in 4 of 5 patients unresponsive to the usual medication employed in the treatment of angina pectoris. The optimum method of administration was 10 mouse units (1 cc.) three times the first day, followed by one injection daily for seven days; biweekly injections of 1 cc. were then necessary to maintain the effect. If escape from the drug occurred, repetition of the initial course of therapy sometimes produced beneficial effects. No untoward symptoms occurred with the dose recommended. Local pain invariably occurred, but in no case was it severe enough to warrant discontinuance of treatment. Cobra venom does not prevent the electrocardiographic changes associated with exertion in patients with angina pectoris. Its action is therefore not that of coronary vasodilatation.

North Carolina Medical Journal, Winston-Salem

6:397-436 (Sept.) 1945

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Synergistic Effect of Acetone and Alcohol in Production of Symptoms of Coma. C. H. Reid Jr.—p. 416.

6:437-468 (Oct.) 1945

Changing Ideas in Treatment of Pulmonary Tuberculosis. C. H. Cocke. —p. 438.
Peribronchitis. F. M. Hanes.—p. 440.
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South Carolina Medical Assn. Journal, Florence

41:246-274 (Oct.) 1945

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Subacute Bacterial Endocarditis in Child: Case. R. H. Chappell.—p. 252.

41:275-308 (Nov.) 1945

Survey of Medical College Expansion: Program and Its Factual Background. K. M. Lynch, J. M. Boone and W. A. Smith.—p. 298.

War Medicine, Chicago

8:137-208 (Sept.) 1945

Minor Psychiatric Reactions in Officers. H. S. Evans and H. F. Ziprick.—p. 137.
Chronic Symptomatology of Combat Neuroses. B. Cohen and R. L. Swank.—p. 143.
*Sodium Amytal Narcosis in Management of Emotional Disorders of Combat Fliers. H. R. Erb and D. D. Bond.—p. 146.
*Emotional Albuminuria in Returned Flying Officers. H. R. Plass. —p. 153.
Asiatic Schistosomiasis: Clinical Features, Sigmoidoscopic Picture and Treatment of Early Infections. A. S. Johnson Jr. and M. G. Berry. —p. 156.
Tsutsugamushi Disease (Scrub Typhus): Clinical Study of 49 Cases. W. L. Anderson and W. M. Wing.—p. 163.
Monilial Pharyngitis. P. A. Tumulty and M. Michael Jr.—p. 167.
Convalescent Care and Rehabilitation of Patients with Spinal Cord Injuries. War Department Technical Bulletin.—p. 199.

Sodium Amytal Narcosis in Emotional Disorders.—Erb and Bond report the results of treatment with prolonged deep sodium amytal narcosis in a total of 311 flying personnel. The patients had early but true combat neuroses and were not men primarily physically fatigued. They all had one or more of the following symptoms: fear of flying or of combat flying, preoccupation with the hazards of combat, insomnia, vivid battle dreams, loss of appetite, irritability, depression, startle reactions, alcoholism, functional vomiting, tremor and, rarely, amnesia. The smallest dose of sodium amytal administered was 1.8 Gm. (27 grains) and the largest 24.6 Gm. (369 grains). The majority of the patients were subjected to a three day period of deep narcosis. Of the 311 men treated, 108 (34.7 per cent) returned to flying duty, 153 (49.2 per cent) returned to ground duty and 50 (16.1 per cent) were returned to the zone of the interior for rehabilitation. The treatment was considered successful in those who returned to combat flying in less than one month after treatment and who performed satisfactorily on more than four missions. This group is represented by 37 patients, or 11.9 per cent of all patients treated. More officers than enlisted men returned to flying duty, and more officers were successful after they had returned. The less severe the emotional reaction, the better the prognosis under this form of therapy. A greater percentage of men returned to flying and a greater percentage were successful when treated within four weeks of the onset of symptoms. In the immediate postnarcotic stage the patient frequently was overwhelmed with aggressive fantasies. The fantasies were often hallucinations concerning one form or another of mutilation and were extremely vivid and brightly colored. The massiveness of the release of aggressive thought is so impressive that its benefit or harm should not be overlooked when one is considering the effects of treatment. The patients who experienced this reaction in its most violent form were those who had rather serious emotional difficulty early in life, whether or not it had been apparent in adulthood.

Emotional Albuminuria in Flying Officers.—In a series of 935 officers returned from combat 49 had albuminuria of variable severity which could not be ascribed to organic disease. Fifteen minutes after withdrawal of blood for a Kahn test 160 of the officers had albumin in the urine. One hundred and eleven of these men had had normal urine before the emotional stimulus of venipuncture. Officers hospitalized for operational fatigue tended slightly to have more frequent and more severe albuminuria than those sent to duty. Plass suggests that such emotional albuminuria should be regarded as one of many signs and symptoms of a person's autonomic activity under conditions of decompensation. The phenomenon is probably less frequently observed in subjects as they become older.

Western J. Surg., Obst. & Gynecology, Portland, Ore.

53:341-378 (Oct.) 1945

Causes for Vaginal Bleeding in Women Over Age of Forty. R. W. Noyes.—p. 341.
Inguinal Herniorrhaphy. E. F. Gooel.—p. 344.
Essentials of Caudal Wall Hernias and Intrasphincteric Hernioplastic Repair of Rectum and Pelvic Floor. C. W. Barrett.—p. 354.
Metastatic Staphylococcal Infection of Gallbladder. R. E. Ottoman and J. W. Baker.—p. 361.
Oil Solutions in Local Anesthesia: Experimental Appraisal. S. R. Truman.—p. 364.
Gastric Adenomas: Pathologic Study. J. H. Rieniets and A. C. Broders. —p. 366.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Radiology, London

18:301-334 (Oct.) 1945

Ankylosing Spondylitis (Symposium). H. Wyatt, R. McWhirter and H. Johnson.—p. 301.

Apical Petrositis X-Ray Appearances of 3 Cases. J. Munk.—p. 309.

*Qualitative and Quantitative Histologic Examination of Biopsy Material from Patients Treated by Radiation for Carcinoma of Cervix Uteri. A. Glücksmann and F. G. Spear.—p. 313.

Case of Rightsided Aortic Arch Associated with Congenital Short Esophagus and Partial Thoracic Stomach. E. R. Williams.—p. 323.

Some Applications of Nomography to Radiotherapy. S. B. Osborn. —p. 327.

X-Ray Examination of Hip Joint in Tuberculous Disease, with Special Reference to Localization of Cavities and Tuberculous Foci. F. G. Wood and M. C. Wilkinson.—p. 332.

Cervical Carcinoma.—Glücksmann and Spear applied a quantitative method by which the effects of radiation could be observed during treatment. The individual response to irradiation of 166 carcinomas of the cervix uteri treated since 1938 was assessed by means of a quantitative microscopic examination of serial biopsies. The subsequent clinical findings have confirmed the histologic assessment in the majority of tumors examined, the proportion of agreements increasing with time after treatment. The histologic assessment has therefore a useful prognostic value. A further series of 502 carcinomas of the cervix treated radiologically between 1930 and 1939 was classified on a preirradiation biopsy according to the degree of anaplasia and the results compared with the clinical follow-up, which covered a period of at least five years. In this series it was also found that the response of anaplastic tumors to irradiation tended to be less satisfactory than that of differentiating tumors.

Irish Journal of Medical Science, Dublin

237:579-608 (Sept.) 1945

Infestation and DDT. J. D. MacCormack.—p. 579.

Progress by Trial and Error (Chemistry Before the Twentieth Century). K. C. Bailey.—p. 593.

Case of Lymphogranuloma Venereum. P. A. McNally.—p. 604.

Journal of Mental Science, London

91:267-410 (July) 1945

Psychiatric Developments. A. A. W. Petrie.—p. 267.

Relationship of Electroencephalography to Psychiatry. D. Hill.—p. 281.

Screening Procedure for Selection of Recruits for Psychiatric Interview. D. Curran.—p. 290.

States of Heightened Suggestibility: Narcosis. H. J. Eysenck and W. L. Rees.—p. 301.

Observations in Hypoglycemia: V. Disorders of Speech. E. Stengel and W. Mayer-Gross.—p. 311.

Autonomic Responses in Prefrontal Leukotomy: Preliminary Report. F. Reitman.—p. 318.

Observations on Rorschach Test in 2 Cases of Acute Concussional Head Injury. O. L. Zangwill.—p. 322.

Study of Certain Qualitative Aspects of Problem Solving Behavior in Senile Dementia Patients. Margaret D. Eysenck.—p. 337.

Experiment in Mental Testing During Hypnosis. Gertrude Keir.—p. 346.

Further Studies on Modified Takata Reaction on Cerebrospinal Fluids of Neurologic and Psychiatric Patients. H. H. Fleischhacker.—p. 353.

Proceedings of Royal Society of Medicine, London

38:613-662 (Sept.) 1945. **Partial Index**

Consideration of Functional Disabilities in Orthopedics. W. E. Tucker. —p. 613.

Intramuscular Vascular Patterns in Man. L. B. Bloomfield.—p. 617.

External Operation on Nasal Sinuses. N. Patterson.—p. 622.

Anesthesia for Surgery of Nasal Sinuses. H. W. L. Dale.—p. 624.

Primary War Injuries Involving Nose and Sinuses. N. Canfield. —p. 627.

Lesions of Facial Nerve Due to War Injuries and Their Repair. F. D. Lathrop.—p. 629.

*Cervicofacial Actinomycosis. A. B. MacGregor.—p. 639.

Cervicofacial Actinomycosis.—For years it was believed that workers associated with cattle or horses were more liable to actinomycosis infection than others, and the fact that similar looking organisms could be found on grasses and straw gave further credence to this view. Recent studies have shown that bovine and human strains differ and that the organisms present on vegetation are nonpathogenic for animals or man. Furthermore, anaerobic strains corresponding morphologically and culturally to the pathologic human Actinomyces israeli type can be found in normal mouths. It seems probable therefore that under certain circumstances, e. g. trauma, the organisms normally saprophytic in the mouth become parasitic and the disease manifests itself. This view is supported by the almost invariable history of trauma, e. g. extraction of a tooth or fracture of the mandible, which precedes the onset of the disease. In many cases the condition is not recognized. Patients may present a single abscess under the chin or on the neck or the classic form with multiple sinuses. In the 10 cases reviewed by MacGregor 6 started with a single abscess, though bacteriologic examinations showed the presence of true actinomycosis in these as well as in the remaining 4. Iodine and x-ray therapy have been the most widely used methods of treatment. In this series iodine was not used and x-rays were used on only 2 patients without especial success. Excision of the whole area in 1 localized case was performed without recurrence. One case with a submental abscess following fracture of the mandible was treated by drainage alone, without recurrence. Two patients were treated by injection of a suspension of sulfonamide into the infected area and along the sinuses without conspicuous success. Seven patients, including 1 of the sulfonamide failures, were treated with penicillin applied by means of thin rubber tubes inserted through incisions in the skin. In 4 of these patients the results were successful. The results of penicillin therapy were in agreement with the in vitro penicillin sensitivity, since the strain of organisms present in the failures were found to be much less sensitive than were those in the successfully treated cases.

Acta Medica Scandinavica, Stockholm

122:105-191 (Sept. 26) 1945

*Reaction of Pleura in Primary Tuberculosis of Lung. R. Müller and S. Löfstedt.—p. 105.

V. Excretion of Urinary Waste Products Under Abnormal Conditions, with Special Regard to Tubular Functions. G. Ekehorn.—p. 134.

Cause of Occurrence of Infantile Paralysis at Time of Fall Equinox. D. Müller.—p. 170.

Erythema Nodosum Following Treatment with Sulfanilamide Compounds. S. Löfgren.—p. 175.

Pleural Reaction in Primary Tuberculosis.—A primary tuberculous pleurisy develops when primary tuberculosis is at its height. This disorder is to be differentiated from postprimary exudative pleurisy, including the exudative pleurisy which develops within three to six months subsequent to the primary tuberculous infection and from the pleural exudate which is frequently associated with phthisis and miliary tuberculosis. Physical examination fails to demonstrate the pleural exudate, and even a careful roentgenologic examination in the sitting position will fail to disclose comparatively large exudates, which gravitate into the phrenicocostal sinus. Laurell's method, modified by Müller and Löfstedt, facilitates the roentgenologic demonstration of minimal amounts of exudate in the pleural cavity. Investigation on 120 healthy persons revealed that the most suitable projections may be obtained with the rays directed horizontally and by rotating the patient while recumbent on the affected side 20 to 30 degrees backward around his longitudinal axis and by elevating his hip so that the spine forms an angle of about 20 degrees with the horizontal plane. By this method fluid in the pleural cavity was demonstrated in 15 of the 120 examined persons (12.5 per cent). Thoracentesis demonstrated that 3 to 5 cc. of fluid may be disclosed by this roentgenographic technic. In 9 out of 10 patients with primary tuberculosis a pleural exudate was demonstrated on the affected side. The amounts of exudate aspirated by thoracentesis varied between 7 and 175 cc. The largest exudates were found in persons who were examined in the course of the first days after the onset of clinical symptoms. As a rule the exudate was absorbed in two to three weeks; in some cases small residual quantities persisted for a long period. These exudates have a high albumin content and contain a large number of polymorphonuclear cells. Guinea pig inoculation was positive in 2 cases. Demonstration of tubercle bacilli in the pleural exudate establishes the diagnosis of pulmonary tuberculosis even if tubercle bacilli cannot be recovered from the sputum or gastric contents. Determination of the cell content of the pleural exudate is an aid to early and definite differential diagnosis from acute pneumonia, which cannot be made unless the patient is studied for a prolonged period.

Book Notices

Electrotherapy and Light Therapy with the Essentials of Hydrotherapy and Mechanotherapy. By Richard Kovács, M.D., Professor of Physical Therapy, New York Polyclinic Medical School and Hospital, New York. Fifth edition. Cloth. Price, $8.50. Pp. 694, with 353 illustrations. Philadelphia: Lea & Febiger, 1945.

This is a presentation of the various phases of physical medicine with greatest emphasis on electrotherapy and light therapy. The author has revised many sections in order to include the newer concepts of electrophysics, ultraviolet irradiation and exercise and to bring the material in this rapidly changing field up to date. In addition, a special chapter on hypothermy has been added, as well as a glossary with general definitions of electrophysics, mechanotherapy and muscle and nerve action.

In an introductory chapter on physical therapy in the practice of medicine the basis and scope of physical medicine are described briefly. Following this, as was true of earlier editions, the book is divided into sections which deal with specific branches of physical medicine. Part I, on electrophysics, explains the fundamentals of this branch of physics and the generation, conversion and distribution of electricity. Much of this material is similar to that in the fourth edition, and the author again uses his comparison of the water system and electricity in order to explain the flow of electrons through a conductor. The electron theory of matter has been brought up to date and is explained in a fairly simple and comprehensible manner. Part II, on general electrotherapy and electrodiagnosis, includes material on currents of low frequency, high frequency, hyperthermy, electrosurgery, electrophysiology and electrodiagnosis. Because of the fact that static electricity has fallen generally into disuse, the author has condensed the material on this subject but states that "in competent hands the static apparatus is still a very useful and versatile piece of electrical equipment." Part III, on light therapy, has chapters on physics of radiant energy, ultraviolet radiation and heliotherapy and includes the physiologic effects of these modalities. Under special technics of ultraviolet irradiation has been added new material on ultraviolet irradiation of the blood. However, the author feels that too few clinicians have made reports on this procedure to make it preferable to other methods of treatment which require much less elaborate equipment and technics.

Part IV, on the essentials of hydrotherapy and mechanotherapy, is a concise description of hydrotherapeutic measures, massage and exercise. Here is a new chapter on hypothermy with descriptions of the mechanical apparatus devised for treatment as well as physical and physiologic effects and therapeutic considerations. Hypothermy also includes a brief but excellent discussion of cold injuries (immersion foot, chilblains and frostbite) with the present day methods of treatment. Part V, on applied physical therapy, gives indications and contraindications for physical therapy in most branches of medicine and surgery. Greatest emphasis is placed on the use of electrotherapy and light therapy in the majority of clinical entities, although the use of massage and exercise is mentioned rather briefly. Included are chapters written by collaborating authors who are specialists in their particular fields of medicine. Here too is material on physical therapy in office practice and institutional practice, which describes the planning of physical treatment, frequency of treatment, judging of results and selection of apparatus and personnel as well as a floor plan for a model physical medicine department in a hospital.

The author has included many pictures of equipment, diagrams and charts which are instructive and well arranged. Bibliographies at the end of a number of chapters give an opportunity to read further on material which may be too briefly handled in this book. The appendix contains tables of motor nerves and muscles as well as motor point charts which are necessary in electrodiagnosis. Because of the clear presentation of the material and the fine glossary, this book is useful either as a textbook for students of physical therapy or as a reference work for clinical practice.

Textbook of Bacteriology. By Edwin O. Jordan, Ph.D., and William Burrows, Ph.D., Associate Professor of Bacteriology, University of Chicago, Chicago, Illinois. Fourteenth edition. Cloth. Price, $7. Pp. 909, with 242 illustrations. Philadelphia & London: W. B. Saunders Company, 1945.

The passage of a textbook through fourteen editions over a period of almost forty years is sufficient evidence of its success. In the review of such a work it is necessary only to point out certain changes. The earlier editions were characterized by their emphasis on bacteriology as a biologic science. Although medical aspects of bacteriology were amply covered, the book was nevertheless a textbook of general bacteriology. Since Burrows has taken over the editorship he has continued to emphasize the fundamental importance of bacteriology as a science, but he has endeavored also to extend its usefulness along medical and diagnostic lines. This edition represents more than the usual type of revision in that several chapters have been completely rewritten. Rapid advances in the field of bacteriology have required this and the publishers are to be commended for their desire to make the revision a real one. In the present edition the chapters dealing with the yeasts, molds and Actinomyces have been completely rewritten, and the chapter dealing with the parasitic protozoa has been extended. Many new illustrations have been added, all of excellent quality. Particularly valuable are the chapters dealing with bacterial physiology, bacterial heredity and variation. In view of the confusion regarding classification of bacteria, the chapter dealing with that subject, including various classifications, enables one to understand better the reasons for the changing emphases. The chapters on the relationship of bacteria to disease and on resistance present the current points of view. One might question the retention of the old Ehrlich receptor theory with the pictures of receptors of the various orders, as this is now largely a matter of history, but perhaps in future editions this will be attended to. The book is beautifully printed and illustrated. There is no doubt that it will continue to serve its purpose even better in the future than it has in the past, owing in large measure to the scholarly way in which Burrows has planned the revision.

Human Biochemistry. By Israel S. Kleiner, Ph.D., Professor of Biochemistry and Physiology, New York Medical College, New York. Cloth. Price, $6. Pp. 573, with 75 illustrations. St. Louis: C. V. Mosby Company, 1945.

This is essentially a textbook of biochemistry for the medical student. It is not a suitable reference work for the practicing physician. The author has made a laudable attempt to relate the subject matter to clinical medicine in sufficient detail to lend interest and significance to the chemical facts, but briefly enough so that the student is not diverted too far or too long from the fundamental subject. There can be little doubt that the book will prove more interesting to medical students than were former textbooks which neglected the clinical aspects. However, this seems to have been accomplished at the expense of fulness and depth in the presentation of the biochemical matter. It may be that through the use of this book the student will learn less biochemistry but will remember and apply a proportionately greater amount in his clinical thinking. It would be of considerable pedagogic importance to know whether this does or does not turn out to be the case.

Clinical Parasitology. By Charles Franklin Craig, M.D., M.A., F.A.C.S., and Ernest Carroll Faust, M.A., Ph.D., Professor of Parasitology in the Department of Tropical Medicine, Tulane University of Louisiana, New Orleans. Fourth edition. Cloth. Price, $10. Pp. 871, with 309 illustrations. Philadelphia: Lea & Febiger, 1945.

The publication of a fourth edition within two years of the third edition attests the deserved popularity of this authoritative textbook of medical parasitology. Text material has been revised and brought up to date and thirty-one illustrations have been added. Information concerning DDT and other wartime advances in disease prevention is included. However, the recommendations on the use of atabrine in the section on the treatment of malaria do not take full account of recent military experience with the drug. Summary tables of the diagnosis and treatment of parasitic infections are provided for the student. The completeness with which the subject is covered and the extensive bibliography also make the volume valuable for reference purposes.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

PROGRESSIVE MUSCULAR DYSTROPHY

***To the Editor:*—A man aged about 26 is afflicted with progressive muscular dystrophy, probably of the Erb type. The patient has been examined by numerous clinics throughout the country, including the Mayo Clinic, but in spite of eminoacetic acid and numerous other attempts at treatment his condition is slowly progressing. The patient is quite discouraged, and the family is willing to try anything that might help his condition. Would it be possible for you to forward a copy of this letter to some physician, foundation or clinic that has been doing experimental work in the treatment of this unfortunate disease?** **R. W. Sleeter, M.D., Medford, Ore.**

ANSWER.—No effective specific therapy for progressive muscular dystrophy yet exists. Many types of treatment have been proposed, but each of these after extensive observations has been demonstrated to be without effect. An abnormality in creatine metabolism with an increase in urinary excretion of creatine and a decrease in creatinine excretion accompanies the disease. It has been demonstrated that changes in creatine excretion may be effected in the dystrophic patient by the administration of a number of substances. These include gelatin (Gibson, R. B., and Martin, F. T.: *J. Biol. Chem.* **49**:319 [Dec.] 1921), aminoacetic acid (Brand, E.; Harris, M. M.; Sandberg, M., and Ringer, A. I.: *Am. J. Physiol.* **90**:296 [Oct.] 1929), pancreatic extract (Meldolesi, G.: *Policlinico* [sez. prat.] **43**:1187 [June 29] 1936), vitamin E (McBryde, A., and Baker, L. D.: *J. Pediat.* **18**:727 [June] 1941) and testosterone (Hoagland, C. L.; Shank, R. E., and Gilder, H.: *Proc. Soc. Exper. Biol. & Med.* **55**:49 [Jan.] 1944). However, administration of these substances to large groups of patients for prolonged periods has failed to provide objective evidences of improvement. Recently in a preliminary communication Milhorat and Bartels described a decrease in creatinuria in progressive muscular dystrophy which occurs when a condensation product of alpha tocopherol and inositol is administered (*Science* **101**:93 [Jan. 26] 1945). Only a small group of patients was treated, and no statement was made concerning the effect of this compound on other manifestations of the disease. None of the substances so far used in therapy have been shown to increase the creatinine output of patients with progressive muscular dystrophy. According to evidence presented by Hoaglund, Gilder and Shank, the decrease in the urinary excretion rate of creatinine is more closely related to the amount and degree of involvement of muscle than is the creatinuria (*J. Exper. Med.* **81**:423 [May] 1945). Moreover, effective therapy should be accompanied by objective evidences of improvement in muscle function and by the disappearance of signs of degeneration and atrophy of the affected musculature.

Despite the fact that specific forms of therapy are lacking, certain considerations in the general care of the patient with progressive muscular dystrophy may postpone the development of incapacitating contractures and the onset of a state of complete invalidism. Patients should be encouraged to use affected musculature as long as even minimal function remains. Periods of prolonged bed rest have been observed to accelerate the process of muscular atrophy. For this reason it is of importance to protect these patients from infectious diseases and illnesses which may make bed rest necessary. Excessive muscular exertion may precipitate more rapid progress of the disease. Therefore, exercise and use of the affected muscles should not be carried to the point of fatigue. Lipodystrophy with deposition of large masses of subcutaneous fat often accompanies the disease. The provision of a diet meeting basal requirements but not permitting excessive weight gain may protect diseased muscle from work loads which are unnecessarily great.

STREPTOMYCIN IN TUBERCULOSIS

***To the Editor:*—What is the efficacy of streptomycin or any other medication in the treatment of primary childhood tuberculosis? My little daughter has contracted the infection (none in the family—it must have been through a nurse or maid) and I am afraid of hematogenous dissemination, as her condition is poor.** **M.D., New York.**

ANSWER.—Streptomycin, an antibiotic isolated by Waksman and his co-workers (Waksman, S. A., and Woodruff, H. B.: *Proc. Soc. Exper. Biol. & Med.* **49**: 207 [Feb.] 1942), from a soil Actinomyces—Streptomyces grisei—has been found to be useful in controlling infections by many gram negative microorganisms. In tuberculosis the effect is limited but promising. Most of the reports to date have been made by Hinshaw and Feldman and others, at the Mayo Clinic (Feldman, W. H.; Hinshaw, H. Corwin, and Mann, Frank C.: *Am. Rev. Tuberc.* **52**:269 [Oct.] 1945. Feldman and Hinshaw, *ibid.*, p. 299). The effect on animal tuberculosis, reported by the authors and others (Youmans, Guy P., and McCarter, John C., *ibid.* **52**:432. [Nov.] 1945) has been more favorable than any other agent tried up to the present time. Many animals were made bacillus free following the treatment.

In human disease the results have been encouraging but not as good as in animals. There seems to be little doubt that the drug retards certain types of tuberculous infections. It is too early, however, to say how permanent are the effects on tubercle bacilli, but open kidney lesions, lymph node lesions, sinuses, lesions of mucous surfaces, late generalized miliary pulmonary lesions and miliary lesions associated with primary infections have been noted to change and partially disappear following streptomycin treatment. The course of the disease in some cases of tuberculous meningitis has been modified, but as yet recovery has not occurred. The changes, however, in ordinary lung tuberculosis have not been sufficient to warrant enthusiasm.

Of almost equal importance to the effect on the disease is the low toxicity of the drug. With few exceptions ill effects from daily doses of several million units, even when administered to infants, do not occur. In a few cases there has appeared to be a slight disturbance of the labyrinth, either directly or as an effect on the nerve. However, the loss of equilibrium seems to be transient and present in only a few cases.

The older the child, the less is the possibility of meningitis and the greater is the possibility of survival as a result of ordinary hygienic care. Streptomycin is probably harmless, although experience is not yet sufficient to say this with certainty. A course of streptomycin treatment might be considered as an experiment when the drug becomes available.

GEOGRAPHIC DISTRIBUTION OF DIABETES

***To the Editor:*—I have been told by practitioners in Maine that the morbidity rate of diabetes mellitus in that state is unusually high. Do the statistics bear this out? Has it been shown that geographic distribution plays a part in the etiology of the disease?** **M.D., New Jersey.**

ANSWER.—Statistics are not available for the morbidity rate of diabetes in Maine. In 1944 sixteen states in the United States had a higher death rate from diabetes during the first nine months than did Maine. In this period Maine showed a death rate per hundred thousand of 28.3. The average for thirty-nine states and the District of Columbia was 27. The state with the highest death rate from diabetes was New York with 42.4, and then followed New Hampshire 38.9, Rhode Island 37.8, Massachusetts 37.3, Pennsylvania 35.3 and Vermont 35.7.

Geographic distribution does not play a part in the etiology of diabetes, but the field is open for intensive research. A survey of Arizona, where the mortality rate for diabetes per hundred thousand in 1937 was 10, as compared with that of Rhode Island, in which it was 42, demonstrated that when the age of the population, sex, number of Jews, obesity, medical supervision and deaths available for statistical purposes were considered the morbidity rate of the two states was approximately the same.

SKIN IRRITATION FROM CYANIDE IN CADMIUM PLATING

***To the Editor:*—In cadmium plating the solutions used are cadmium or sodium cyanide. Is there a nonpoisonous and relatively nonirritating substitute for the cyanide solution? It need not be as good as the cyanide solution if it could give fair results.**

Aaron N. Gorelik, M.D., Bronx, N. Y.

ANSWER.—At the present time in cadmium plating, cyanide solutions are almost invariably employed. From the point of view of quality of results and economy, cyanide solutions are greatly preferred in the trade. However, it is common practice to use along with the cyanide solution sodium carbonate or caustic soda. While this is done for product reasons rather than for protection of the worker, some benefit derives because the presence of such alkalis hampers the liberation of hydrocyanic acid, and the quantity used does not increase the probability of skin irritation. The only known substitute for cyanide baths are sulfate baths, but the product obtained is frequently less perfect than with cyanide solution. In case highly lustrous coatings are desired, sulfate baths in some instances may be used to advantage. The chief objection to sulfate baths is the rough crystalline character of the plating with a disposition

toward treeing, which is often undesirable. To a degree this may be overcome through the addition of colloidal agents such as gelatin. This matter is discussed in "Modern Electroplating" (American Chemical Society, Inc., Columbia University, New York, 1942). In all other forms of electroplating cyanide baths are far less indispensable. Although cyanide is widely used in copper and indium plating, suitable substitutes are available, particularly in the case of indium plating, in which sulfate baths are increasing in popularity. Through the use of adequate exhaust systems and skin protection, cyanide baths in cadmium plating may be made essentially noninjurious.

DOSE OF ACETYLSALICYLIC ACID FOR HEADACHE

To the Editor:—**What is the pharmacologic basis that determines the dose of acetylsalicylic acid used in the treatment of simple headaches for which no apparent cause can readily be found? Is 5 grains as efficient as 10 or 15 grains for an anodyne effect? What is the optimum time interval between doses?**

M.D., District of Columbia.

ANSWER.—The basis for dosage is largely empirical. Clinical custom is to administer about 0.6 Gm., repeated if necessary every three or four hours. Although one cannot directly transfer available experimental evidence to the clinical problem of headache, the presumption is that such findings as those of Wolff, Hardy and Goodell (*J. Clin. Investigation* **20**:63 [Jan.] 1941) are relevant and indicative of general effects. Thus it was shown that if the pain produced by heat focused on the forehead could be relieved at all, 0.3 Gm. of acetylsalicylic acid would give a maximum degree of relief, but that 0.6 or 0.9 Gm. would prolong the effect somewhat. Also administration of 0.3 Gm. every two hours gave more sustained relief than 0.6 Gm., or more, every three hours. One might conclude therefore that the customary clinical dose is too large and the administration too infrequent. However, simple headache often responds to one dose, in which case the larger amount would presumably be more lasting and therefore more useful. In any case, treatment is unlikely to be long continued and so toxicity is not greatly to be feared. Until more direct evidence is available it is probably advisable to use a dose of 0.6 Gm., repeated every two to four hours as necessary, for the relief of simple headache.

INABILITY TO GAIN WEIGHT

To the Editor:—**A woman aged 20, single, who has been under my care for five weeks, is definitely underweight and has a history of having been in a sanatorium for possible tuberculosis for nineteen months ending May 1944. She complains of poor appetite but doesn't feel tired, and aside from the anorexia and underweight the physical examination reveals practically nothing. I put this girl on a high calory diet. She kept a count of her calories and averaged 2,700 to 3,000 calories a day. The first week she gained 2 pounds (0.9 Kg.), for four weeks she remained at exactly 93 pounds (42 Kg.) and today was down to 90 pounds (41 Kg.). Although she does not have a goiter, I made a test of her basal metabolism this morning; the result was minus 1.5. Why doesn't this young woman gain weight in spite of the normal thyroid action and high caloric intake? She does not work except possibly for light housework. The last x-ray at the sanatorium showed the tuberculous lesions to be well healed. She does not have clinical symptoms of active tuberculosis at present. What other conditions must one consider in connection with this girl?**

T. G. Harvey, M.D., Fort Fairfield, Maine.

ANSWER.—The law of the conservation of energy still holds. If the patient claims that she is eating 2,700 to 3,000 calories a day and maintains her weight at 90 pounds in spite of a normal level of metabolism, she either does not know what a calory is or imagines that she eats more than she actually does or else disposes of her food and claims that she eats it. It is assumed, of course, that the patient has been carefully studied and does not have diabetes mellitus.

The case is recalled of a student who had a basal metabolic rate of —25 per cent and weighed 75 pounds (34 Kg.). She insisted that she was taking 2 grains (0.13 Gm.) of thyroid and 1 quart (liter) of 20 per cent cream daily in addition to her meals. In spite of her statement, her basal metabolism remained at the low level and her weight did not increase. She was finally placed in the hospital for observation. The administration of desiccated thyroid was continued and she was placed on a diet about 3,500 calories. Her basal metabolism still remained at a level of approximately —25 per cent and her weight at a level of about 75 pounds. All the food that was served to her disappeared from her tray. The mystery was solved when the maid on the floor caught the patient one day throwing her food in the toilet seat which was in her room. From then on she began to gain weight.

BRUCELLOSIS OR TULAREMIA AND BLINDNESS

To the Editor:—**A boy aged 9 years has been ill for five weeks. At the beginning he had a definite pallor, then a jaundiced appearance over the entire body followed by fever and an enlargement of all lymph nodes. He complained of pain in the joints and headache. There was no ulceration or breaking down of any of the glands. His face and eyes were swollen. Two weeks ago his hearing and vision began to fail, until he became partially deaf and almost totally blind. A blood test has been taken and the disease pronounced tularemia. At the present time he does not suffer pain and his appetite is good with only slight nausea and a burning in the stomach. His temperature varies from normal to 102 F., the pulse rate is 100 and the respiratory rate is around 20. His face and eyes are still swollen. His hearing has improved, but he is still blind. I cannot find reports of involvemeent of the eyes and the ears in any of the medical literature I have on the subject, and none of the physicians with whom I have talked have ever heard of this complication. Treatment has been supportive.**

V. P. Jackson, M.D., Pinehurst, Ga.

ANSWER.—Insufficient information is given to make a diagnosis. Except for rare cases of oculoglandular infection, diminution or loss of vision has not been recorded for tularemia. The type of onset and the early clinical course described do not suggest tularemia. The agglutination test for tularemia should be repeated. At the same time request should be made for agglutination of Brucella and Leptospira. Additional helpful information toward a diagnosis would include a complete blood count and examination of the fundus for evidences of optic atrophy or of choking of the disk that might imply cavernous sinus thrombosis. Both of the latter have been observed in brucellosis, and serum from some patients with this infection will agglutinate Bacterium tularense.

ACETANILID AND SULFHEMOGLOBINEMIA

To the Editor:—**A patient has sulfhemoglobinemia apparently as a result of long continued ingestion of B. C. headache powders. The diagnosis has been proved spectroscopically. What is the latest treatment of this condition? The patient also has latent syphilis with positive serologic reaction after nine months of weekly treatment elsewhere. Have syphilis and sulfhemoglobinemia in the same patient been reported previously, and would treatment of one condition affect the other in any way?**

Maurice J. Small, M.D., Parsons, W. Va.

ANSWER.—Acetanilid, which has been reported in B. C. headache powder, has been reported to cause sulfhemoglobinemia (Morgan, T. N., and Anderson, A. Greig: *Brit. M. J.* **2**:187 [Aug. 10] 1940). There is no special treatment for sulfhemoglobinemia. Recovery occurs slowly after discontinuation of the offending drug. Record of syphilis and sulfhemoglobinemia in the same patient has not been found. As antisyphilitic drugs have not been shown to produce sulfhemoglobinemia, their use is not contraindicated in this condition. The recent literature on this subject is concerned mainly with sulfonamide therapy as an etiologic factor.

DIAGNOSIS OF ACUTE CHOLECYSTITIS

To the Editor:—**Is it possible to have an acutely infected gallbladder without bile in the urine, a negative van den Bergh reaction and an icterus index of 9?**

J. M. Bodenheimer, M.D., Shreveport, La.

ANSWER.—The presence of bile in the urine, a positive direct van den Bergh reaction and an elevated icterus index all indicate the presence of obstruction in the biliary passages beyond the union of the cystic and hepatic ducts. Acute cholecystitis does not necessarily imply the presence of inflammatory obstruction in the required area, so acute cholecystitis may exist without the signs of biliary obstruction. When the signs of biliary obstruction appear, one assumes that the inflammatory process has spread into the bile passages. The icterus index of 9 is slightly above the usual normal range but is still below the level of clinical jaundice.

TEMPERATURE AND HUMIDITY IN OPERATING ROOM

To the Editor:—**At what temperature should an operating room be kept for abdominal surgery and for general surgery other than abdominal, if there is any difference?**

M.D., Vermont.

ANSWER.—A temperature between 78 and 80 F. has been found satisfactory at one of the leading hospitals. No attempt is made to control the humidity. When the operating rooms are air conditioned, the humidity is kept between 50 and 55 per cent and the temperature range is from 70 to 80 F. in direct relation to the humidity. This has been considered ideal for general surgery.

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